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This document, after presenting a general overview of the many changes in secondary education, focuses on a highly selected number of changes that have particular meaning for school administrators. Some of the ramifications of educational technology are discussed with emphasis on information systems, computer assisted instruction, and data processing in school management. Next, the emerging role of the school administrator as a management specialist rather than an authority figure receives attention along with the related topics of systems analysis, interaction analysis, group organization, and decision making. To demonstrate school programs that are the products of superior educational leadership and planning, unique aspects of programs in a Las Vegas, Nevada, high school, a Hughson, California, high school, and the Niskayuna, New York, Public Schools are presented. Finally, that administrators and educators must broaden their conception of education to cope with the wide range of pressing problems faced by society is emphasized as the school's role in contemporary society is analyzed. [Charts & figures, pp46, 61, 75 may be of doubtful legibility in hardcopy because of size of print.] (TT)

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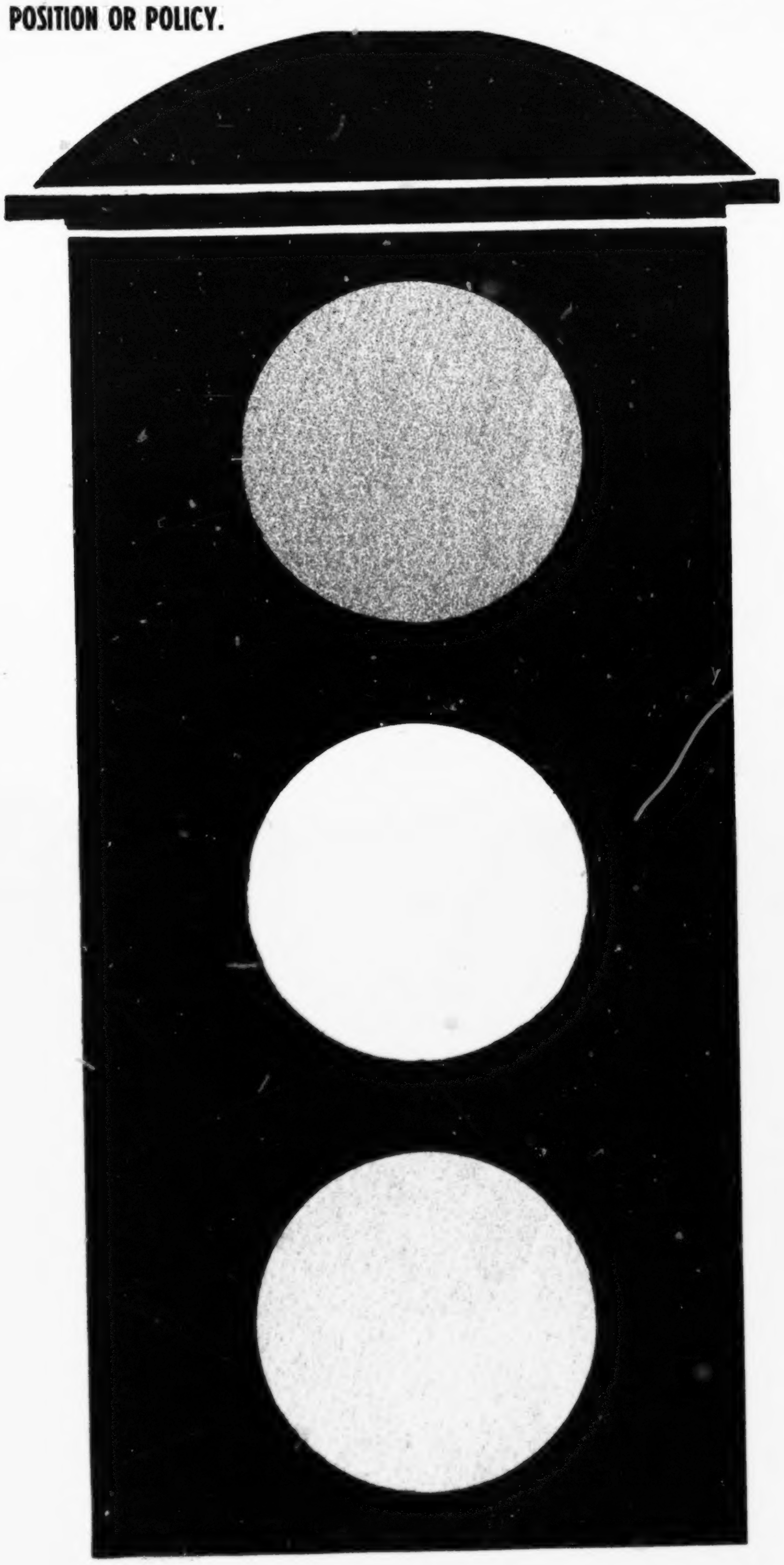

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NEW DIRECTIONS FOR SCHOOL ADMINISTRATION

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FORWARD

This material is the product of a travel and study project sponsored by the California Association of Secondary School Administrators. It was prepared by CASSA Executive Secretary William N. McGowan. During the months of April, May, June and July, 1968, Mr. McGowan followed a travel schedule that included:

- * Conversation with David B. Austin and Frank Smith, Teachers' College, Columbia University.
- * An interview with J. Lloyd Trump, National Association of Secondary School Principals.
- * Visit to Niskayuna High School, New York.
- * Visit to Oakleaf School (just outside Pittsburgh, Pennsylvania.)
- * Visit to the Learning Research and Development Center at the University of Pittsburgh.
- * An interview with Robert Peebles, Director of Special Projects for the city of Pittsburgh, Pennsylvania.
- * Interviews at the U. S. Office of Education with Jack Morgan, Duane Nielsen, Lawrence Braaten.
- * Visit to Roy High School, Utah.
- * Visit to John Marshall High School, Portland, Oregon.
- * Visit to Clark High School, Las Vegas, Nevada.

* Visit to Beverly Hills High School, California.

* Visit to Claremont High School, California.

* Visit to Hughson High School, California.

Purpose of the project was to gather information that might prove helpful in "pointing directions" for change in school administration.

It is hoped that the monograph will:

* Provide school administrators - and those interested in school administration - useful information concerning actual changes taking place in education today.

* Titillate the reader so that he will seek further information regarding real innovation in school programs and the management of the education enterprise.

* Give those responsible for the administration of public schools a sense of newly emerging characteristics of the function of administration.

* Provide on-site school administrators (principals and co-administrators) some indications regarding new qualifications for administrators.

* Inspire some individual thought and action toward improvement of the educational effort.

* Help school administrators develop a new perspective from which to view the task of education and the administrator's role in performing the task so that they may proceed thoughtfully toward the tomorrows that beckon.

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CHAPTER I

IT'S A NEW BALL GAME

The SCP's

For over fifty years the Seven Cardinal Principles (SCP's)[1] have acted as a philosophical bellwether for secondary school program makers and guided them through many a fair field. Philosophers have come and gone, educational psychologists have been invented, commissions have been established, President's conferences have been held - and the SCP's still look pretty good.

There's only one problem. The SCP's, now dignified by age and elucidation, have never been fully implemented. One reason for this is that they have never been fully understood. They have been accepted intellectually, but never internalized and made a part of the "gut level" educational effort. However, because of investigations and thinking accomplished over the last decade, it is now possible to comprehend more fully the meaning and significance of the Seven Cardinal Principles. This comprehension can be useful as a point of beginning for the development of a secondary school system that will actually help individuals learn how to identify, analyze, solve, and accommodate to the perplexing problems of contemporary existence. It means a "new ball game" in secondary education.

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1. For those who may not be able to immediately recall the Seven Cardinal Principles enunciated by the Commission on the Reorganization of Secondary Education in 1918, they are: 1) Health; 2) Command of Fundamental Processes; 3) Worthy Home Membership· 4) Vocation; 5) Citizenship; 6) Worthy Use of Leisure; 7) Ethical Character.

A New Ball Game

This new ball game is the product of new knowledge, played on a new field, with new rules. There are two factors primarily responsible for the use of new knowledge to redesign educational programs at the secondary level.

The first factor involves the growing concern of an increasing number of people to *do something* about making secondary school education more relevant to the present-day needs of school-age young people. The second factor deals with development of new techniques for stating educational objectives in such a way that they become functional in identifying desired behavior on the part of students, and in guiding those responsible for instructional design in the creation of systems that will build toward and elicit this desired behavior.

Relevancy

The hard core of the current secondary school program is about as relevant to modern needs as is the appendix to human body function. A vestigial remain, it serves little practical function, and can actually cause serious trouble for many people.

Contemporary education is based upon a relatively sound concept that individuals will be better individuals if they possess a broad background of knowledge about many things. It has been supposed that the best way of conveying this knowledge is to segment its presentation and indoctrinate young people with content from selected subject areas. This is a mistake. The error has been compounded by a system designed to teach all students the same content at the same rate of speed. Further impossible complications have been invited by the supposition that knowledge concerning the selected subjects will remain eternally the same, age without end, Amen.

Of course, it simply hasn't worked out the way the traditionalists have tried to arrange. Individuals have different capacities for assimilating different kinds of knowledge. They learn at different rates of speed. Knowledge breeds knowledge and expands. In so doing, knowledge becomes different. It changes. A truth today may, by reason of new knowledge, be something else tomorrow. The world changes, and old physics is replaced by the new. The world of Newton is superseded by the Universe of Einstein. Instant communication changes the aspect of history. Relevant subject matter for secondary school students today cannot be what it was for their parents.

Many people, professional educators and those who are not professional educators, are rightfully concerned for the lack of relevancy in today's school program. A few individuals are doing something about it. Some of the most important work being done concerns the development of new educational objectives and a way of stating these objectives in behavioral terms.

Behavioral Objectives

Mager says this of educational objectives:

1. An instructional objective describes an intended outcome rather than a description or summary of content.

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1. Mager, Robert F., Preparing Instructional Objectives, Fearon Publishers, Palo Alto, California, 1962, p. 24.

2. One characteristic of a usefully stated objective is that it is stated in behavioral, or performance, terms that describe what the learner will be *doing* when demonstrating his achievement of the objective.

3. The statement of objectives for an entire program of instruction will consist of several specific statements.

4. The objective which is most usefully stated is one which best communicates the instructional intent of the person selecting the objective.

Further elucidating his belief, Mager[2] says this in the final summary of his book:

1. A statement of instructional objectives is a collection of words or symbols describing one of your educational *intents*.

2. An objective will communicate your intent to the degree you have described what the learner will be *doing* when demonstrating his achievement and how you will know when he is doing it.

3. To describe terminal behavior (what the learner will be *doing*):

   a. Identify and name the overall behavior act.

   b. Define the important conditions under which this behavior is to occur (givens and/or restrictions and limitations.)

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[2] Ibid., p. 53.

c. Define the criterion of acceptable performance.

4. Write a separate statement for each objective. The more statements you have, the better chance you have of making clear your intent.

5. If you give each learner a copy of your objectives, you may not have to do much else.

Instructional Design

The above approach to a statement of objectives has specific implications for the design of instruction. Robert Glaser, in a preprint of a chapter to appear in the Encyclopedia of Educational Research, Fourth Edition, Macmillan, New York, 1969, suggests the following general requirements for good instructional design: (a) specification of the properties of the behavior or task to be learned; (b) specification of the characteristics of the learner; (c) specification of the conditions which permit the individual with the behavior specified in (b) to attain the behavior described in (a); and (d) specification of the conditions under which the learned behavior will be maintained and the individual will be motivated to use it.

A New Philosophical Base

If those responsible for secondary education want to make it more relevant to current needs, want to develop behavioral objectives that will better define the educational task, want to use the best methods of instructional design - they will accept a new philosophical base upon which to build the modern school program. This is that - to educate young people in the process of learning so that they may see beyond the accumulation of factual knowledge to a rearrangement of information in new models for new purposes is the only preparation for survival. (More about this later.) Those educators who are building for the future are developing programs to implement this philosophy.

Modern Education

Roger Revelle, in a paper presented to the U. S. House of Representatives Committee on Science and Astronautics, January 26, 1966, said this of the best of modern education:

Modern Education Strives to Give:	Traditional Education Leads to:
Problem Solving Ability	Rote Learning
Belief in Experimentation and Empiricism	Acceptance of Authority
Love of Innovation	Love of Tradition
Creativity	Regimentation
Self-Confidence	Search for Security
Optimism	Fatalism
Ability to Continue Learning Throughout Life	Terminal Education
Bringing Out Individual Abilities	Uniformity of Training
Self-Discipline in Work	Imposed Discipline in Classrooms

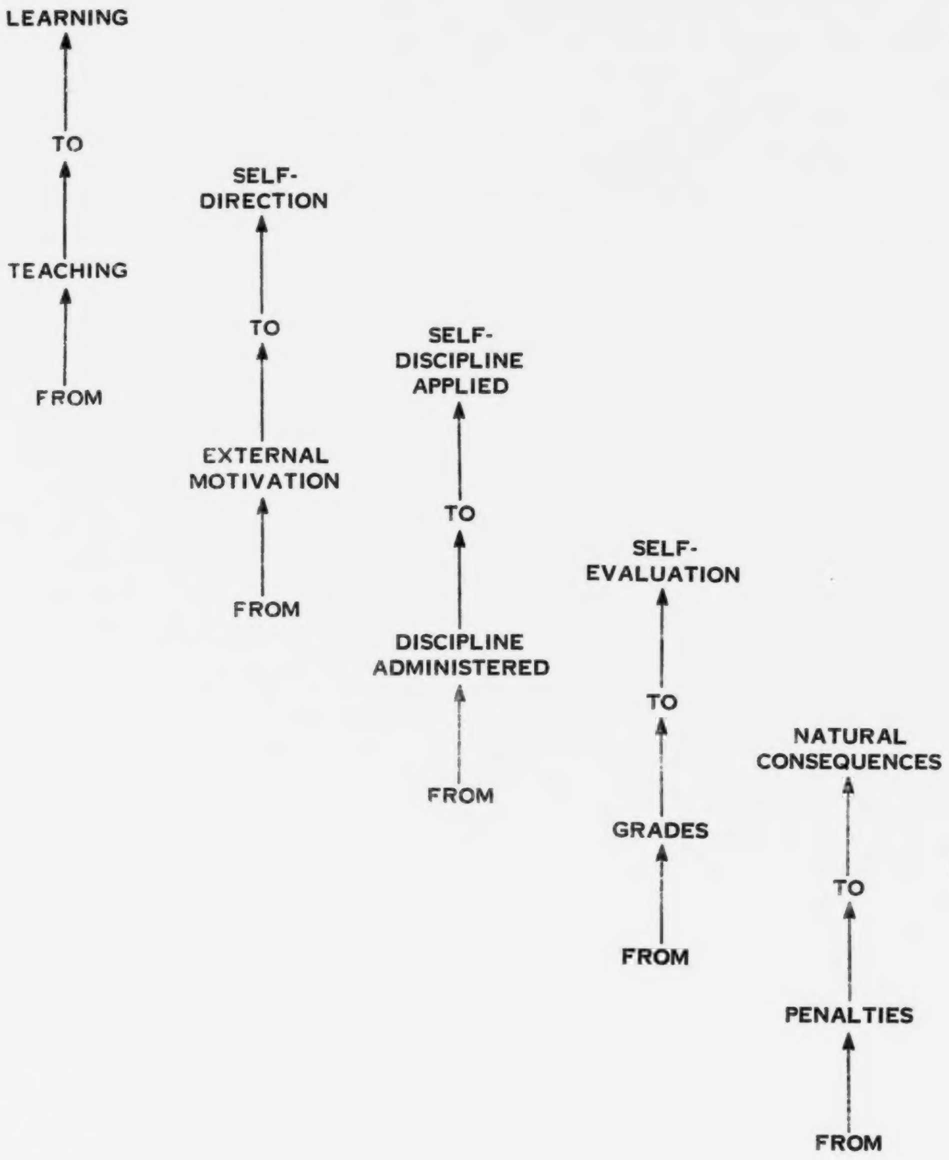
Coordination Between Hand and Brain	Rejection of Handwork
Public Morality and Responsibility	Family or Group Morality and Responsibility
Management and Decision-making Ability	Avoidance of Decisions
Ingenuity and Inventiveness	Following of Routine or Accepted Ways of Doing Things

Modern education is more concerned with the student than subject matter, more interested in human behavior than course content. And about time! Traditional preoccupation with subject matter and the teaching (telling) of subject matter has failed to meet human needs and has been responsible for development of critical school problems facing the public today. Young people are rebelling against a school program that lacks relevancy to the real world. A process-programmed conflict situation has been created for students in the real world, for which the less real world of the traditional school gives them but meager preparation.

Student vs. Subject Matter

The modern school, with a program designed to be transitional between today and tomorrow, is placing emphasis on new components of the evolving system of education, accepting new goals and fulfilling new tasks - with focus on the student instead of subject matter.

THE CHART BELOW ILLUSTRATES SOME OF THESE NEW POINTS OF INTEREST:


LEARNING
TO
TEACHING
FROM
SELF-DIRECTION
TO
EXTERNAL MOTIVATION
FROM
SELF-DISCIPLINE APPLIED
TO
DISCIPLINE ADMINISTERED
FROM
SELF-EVALUATION
TO
GRADES
FROM
NATURAL CONSEQUENCES
TO
PENALTIES
FROM

From Teaching to Learning

A modern school program is moving from emphasis on teaching to emphasis on learning.

The traditional classroom is a kingdom ruled by the teacher-autocrat who dispenses knowledge from an unchallenged position of authority in a manner that is highly personal, and relatively disregarding of students. The emphasis is upon teaching subject matter. Some students can actually "learn" in this situation because some students will learn in any situation. However, the vast majority of students do not learn as well as is desirable, and many are absolutely lost to learning.

The modern classroom is a free society where the teacher-consultant provides stimuli to students who react in an individual manner, gaining information and developing behavior that will allow them to use knowledge for their own purposes in an individually and socially satisfying manner. All students learn what they are capable of learning and using. No student fails. No student is "put down." No student develops a poor self-image that leads him to fulfill self or other-imposed poor expectations. As more is discovered about learning processes, more emphasis is put upon the importance of the individual as the affective component.

Glaser[3] has this to say about "learning processes":

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[3] Glaser, Robert: Learning, a chapter to appear in the Encyclopedia of Educational Research, Fourth Edition. Macmillan, New York 1969

"The learner acts upon his instructional environment, changes it, and is changed in turn by the consequences of his actions. Certain processes alter behavior so that it achieves a useful interchange with a particular environment. When appropriate behavior has been learned, it sets up new consequences in the environment which work through similar processes to maintain this behavior and use it to develop more competent and subtle behavior. Relevant questions for a science of learning are: How is the behavior of the learner influenced and shaped by the environment or the people in it? How does the learner come to control his environment; and how, in turn, does this environment influence him? By arranging environmental consequences or contingencies, the probability with which behavior occurs can be increased; by eliminating the consequences, the probability can be decreased. These are the processes of acquisition and extinction. The particular properties of the behavior acquired depend upon the details of the environmental contingencies. A complex repertoire can be taught by a series of environmental changes, each stage of which allows the learner to respond and also prepares him to respond at a later, more complex stage. Such an instructional sequence is carried out when the teacher devises environmental changes as the student goes through a curriculum; the instructional sequence also might be prescribed in advance as in certain kinds of programmed instruction and other lesson materials. Certain behaviors require extensive instructional sequences; others as a function of past learning are acquired rapidly through such environmental events and procedures as verbal instruction and observation.

"As responses and the integration of responses

> are learned, they are acquired in relation to particular events or stimuli so that the behavior performed occurs relevant to some context. Behavior is learned in the presence of contextual stimuli and is, therefore, likely to occur in the presence of this context. In a sense, stimuli come to control certain kinds of behavior so that, for example, competence in a subject matter is displayed when, in the presence of certain subject-matter stimuli, the student responds with appropriately skillful behavior ..."

From External Motivation to Self-Direction

A modern school program is moving from emphasis on external motivation to "self direction."

The individualization of instruction has been and continues to be one of the greatest challenges faced by the professional educator. The very idea of "individual instruction" implies a need for self-directed activity on the part of a student. Individualization of instruction establishes a new relationship between the learner and those stimuli used to provide external motivation for the pursuit of learning. To the degree that instruction is individualized, the learner depends more and more upon self-direction.

It is important here to remind the reader that the discussion concerns "emphasis." External motivation continues to play a commanding role in the drama of learning, but more and more emphasis is being placed upon the importance of student self-direction to achieve meaningful involvement in learning processes, satisfactory development of desired behavior and successful achievement of individually significant goals.

Omar K. Moore, one of the developers of the "talking typewriter," indicates the importance of self-direction by stating that in his research he has proceeded on the assumption that "most of the content which ultimately ends up in the computer can be obtained from the learner himself."[4]

From Discipline Administered to Self-Discipline Applied

A modern school program is moving from emphasis on discipline administered to self-discipline applied.

Many secondary school people refer to student behavior problems as "problems of student control." The connotation here is perfectly apparent, and the implications convey a suggestion as to why an attitude of mind defining behavior problems in terms of "control" is inadequate to cope with the essential problem. "Control" implies the application of force. "Force" invites counterforce. The application of student "control" invites the action of students to apply pressure to "test," to "counter" the force of control.

Control cannot solve student behavior problems. Discipline applied as one aspect of a "control" situation can never solve any problem. Discipline administered is always "after the fact." It is a concession to expediency and may terminate a kind of behavior without in any way attending causes of the behavior.

Any success in attacking student behavior problems will be achieved only by establishing a system maintaining standards of behavior recog-

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4. Moore, Omar K., New Directions in Individualized Learning. Paper given at Abington Conference, April 23-25, 1967. P. 6.

nized as valid by students who through self-discipline uphold the standards. When violations occur, "due process" must be followed in identifying cause or causes for the action, evaluation of results of the violation, assessment of responsibility for results of the violation, and development of recommendations for corrective or compensatory action. The whole emphasis for maintenance of standards of behavior and treatment of violations is upon individual reaction, personal responsibility and self-discipline.

Emphasis on self-discipline in developing responsible attitudes and patterns of behavior about learning is also of fundamental importance in the modern school. Mention of this will be made under the next sub-heading.

From "Marks" to Self-Evaluation

A modern school program is moving from emphasis on "grades" to emphasis on self-evaluation.

Progress toward increasing individualization of instruction necessitates emphasis on the importance of self-evaluation. This seems too obvious to warrant much discussion. Programmed instruction has "built in" self-evaluation procedures. One of the strong features in computer-assisted instruction concerns the opportunities afforded students to constantly evaluate the quality of their own efforts. Even without PI or CAI the effectiveness of self-evaluation as a motivational device is sufficient to warrant its increasing use.

Grades have never been infallible indicators of the quality of learning taking place. As a matter of fact, a grade given may not even be a measurement of the knowledge actually acquired by a student. The student may have received a grade in a certain subject when the actual knowledge acquired pertained to something else.

When a student understands established standards and must evaluate his success in meeting the standards, the very act of self-evaluation becomes an important act in reinforcing learning. A spin-off value of the process is that it provides opportunity for the development of a sense of personal responsibility in establishing closure with a subject or process.

At this point self-discipline, discussed above, becomes of direct importance in determining the degree of success of the student in participating in the learning process. Self-discipline applied will make the involvement in learning and self-evaluation satisfying and personally rewarding.

A manner in which self-discipline may be encouraged is discussed in the material that follows.

From Penalties to Natural Consequences

A modern school program is moving from emphasis on penalties to emphasis on natural consequences.

Quite frequently, given certain circumstances and conditions, there can be powerful positive motivation from a negative force. Heart attack victims change their living style and oftentimes outlive others ostensibly healthier than they. Johnny gets a ticket for speeding in his newly acquired car and is "grounded" for six weeks because of prior agreement with his paternal parent. During the six weeks grounding his school work shows marked improvement. Examples abound.

The simple truth is that all individuals at some time or another are transgressors. They fail to do something they should have done, or do something they should not have done. A student does a project with no regard for performance criteria. Another student doesn't do it at all! A student refuses to stand for the singing of the National Anthem. Another student tears the "Song of Solomon" out of the Bible in the library.

When transgressions occur something must be done about it - oftentimes for the good of the transgressor as well as for the protection of society. The traditional method of treating transgressors in school has been to apply "penalties." Quite often the assessment of penalties creates serious problems because transgressions frequently yield to varied interpretations, and differences in interpretation exist between the transgressor and the individual responsible for applying the penalty. The feeling between the transgressor and the "penalizor" is very personal and can cause trouble extending far beyond the immediate involvement.

However, if natural consequences of transgression are allowed to apply, the "personal equation" is solved between the transgressor and the "penalizor" because the penalizor ceases to function as a penalizor. He becomes an instrument for social justice rather than "judge and jury."

Rudolf Dreikurs[5] says this of "natural consequences":

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5 Dreikurs, Rudolf, Psychology in this Classroom, Harper and Row, New York and Evanston. 1957. P. 76-77.

> "Letting the natural consequences of a transgression take place does not require any investigation or understanding of the psychological causes for the child's misbehavior or deficiency. Proper evaluation of the incident and sufficient resourcefulness suggest the natural consequence inherent in a given situation; they impress the child with the disadvantage of continuing his nonconformity, disregard for order, and other forms of noncooperation. Natural consequences are not the only form of corrective influence; and many transgressions are not of such a nature that natural consequences can be applied. Yet in the hands of a trained and resourceful teacher (administrator!) they are applicable in many situations ...
>
> "Natural consequences express the power of the social order and not of a person ..."

16 The student who disregarded performance criteria in work on a project was required to do the project over because the class as a whole had accepted the performance criteria as condition for successful fulfillment of the assignment. The student who failed to do the assignment at all was required to meet the teacher in a conference to determine causes for the failure to do the assignment. This was established procedure for all students failing to do assignments. (A whole series of natural consequences might evolve from the conference.)

The student who refused to stand for the singing of the National Anthem was excluded from participating in those meetings where the National Anthem was to be sung, this by action of the student council which had adopted policies concerning patriotic observances.

The student who admired the "Song of Solomon" was required to buy another new Bible for the library because School Board policy stated that those guilty of mutilating books in the library must pay for their replacement.

Artificially established penalties personally administered are "out." The application of natural consequences in a "due process" configuration is "in."

"Imperatives" And "Responsibilities"

As modern education progresses toward the development of a truly student-centered process-oriented program, national and state organizations are creating new statements to express new understandings and beliefs.

A special commission of the American Association of School Administrators formulated a statement of "Imperatives in Education," published in 1966. These "imperatives" are:

To make urban life rewarding and satisfying.

To prepare people for the world of work.

To discover and nurture creative talent.

To strengthen the moral fabric of society.

To deal constructively with psychological tensions.

To keep democracy working.

To make intelligent use of natural resources.

To make the best use of leisure time.

To work with other peoples of the world for human betterment.

A special committee of the California Association of Secondary School Administrators has identified fifteen "responsibilities" of the secondary school program.[6] These are:

1. To provide opportunities for understanding and appreciation of the need for individual flexibility in an atmosphere of change.

2. To develop in youth an attitude of inquiry; to teach the process of problem solving and decision making as distinguished from the storing of facts.

3. To continue training in the basic tools of learning.

4. To develop a curriculum where the criterion for priorities is based upon relevance to contemporary and future needs of youth.

5. To prepare youth for a changing world of work.

6. To prepare youth for responsible, participating citizenship.

7. To provide preparation for productive use of leisure time.

8. To extend and emphasize the teaching of the fine arts.

9. To teach civilized human relations.

10. To build bridges to an understanding of all the peoples of the world.

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[6] Education Now For Tomorrow's World. A CASSA Committee on Educational Objectives for the Future. 1968.

11. To assist youth in developing moral and ethical guidelines.

12. To prepare youth to understand and deal constructively with psychological tensions.

13. To assist youth in developing ways of insuring individual privacy and worth in a world of increasing group activity and social supervision.

14. To provide opportunities for study and understanding of urban life and problems.

15. To develop an instructional program in school that fully utilizes information sources and agencies outside of the classroom.

All too frequently statements such as those quoted above can best be described by a word that almost rhymes with "verbiage." Such statements are compiled by persons more concerned with words than meanings, people who haven't the faintest idea as to how to attack the tasks they vaguely indicate for action. The AASA "imperatives" come perilously close to being in this category, but are redeemed by indicating at least a sensitivity to subject matter of critical importance to the American public.

The CASSA "responsibilities" are of a different character altogether, and need only to be translated into a statement of behavioral objectives to provide a viable, challenging and much-needed blueprint for developing an educational program relevant to the needs of contemporary youth and society.

These expressions of "imperatives" and "responsibilities" indicate where the eyes are turning, the direction in which the heart is pulling. It now remains to be seen whether or not the head has the wit to follow.

There are other types of indications that it's "a new ball game."

Merit Pay

Merit Pay, anathema to teachers' organizations only a few years back, has become an accepted principle (by whatever name it's called) in a growing number of school districts. One California district affords a $25,000 annual salary for master teacher types. There are many ways of providing merit pay. One bare outline of a merit pay system is given below.

Merit Pay
(A Professional Qualification Increment)

1. Base pay established by type of credential, experience and personal qualification.

2. Added increments for in-service education, graduate credits according to whatever pattern is established.

3. Other increments for easily identified and specified extras - curriculum development, special projects, etc.

4. Additional increments based upon high professional qualifications according to standards established as a result of joint study by the School Board, Administration and Teaching Staff.

A Professional Standards Committee should be established in every school composed of an equal number of teachers and those in administrative, supervisory positions.

Teachers and those in non-teaching positions may either apply for the "Professional Qualification Increment" or be nominated for it by another member of the staff. The school PSC recommendation for PQI's must be submitted for action to the District PSC. Candidates may receive the increment only on unanimous vote of the District PSC. The increment, once awarded, applies for a period of three years, at the end of which time a review will be made by the school PSC to determine whether or not it should be continued. Recommendation of the school PSC shall be final and must be by unanimous vote. PQI's renewed for three terms become permanent.

Another, perhaps better, way of achieving merit pay is to establish qualifications for a special teacher classification and let staff apply for it in the same manner application is made for any other position.

The All-Year School

The year-around school is inevitable. The rapid increase in size and number of summer school programs is in itself an indication of new attitudes regarding extension of the school year.

More and more institutions of higher education are adopting quarter systems. Business and industry are shifting vacation schedules away from summer months to maintain year-around productive activity. That this is having a very real effect on vacation schedules is demonstrated by travel agencies that find an increasing level of travel business occurring during Fall, Winter and Spring months.

In the following proposal for an all-year school calendar there are 201 teaching days. It is suggested that teachers be required to teach 150-152 days with an additional 18-20 days for curriculum development, inservice education, etc.

as part of the contract period. Students may be programmed for three or four quarters, according to parental wish. Interims between quarters can be used for data processing, evaluation, student conferences, parent conferences, etc.

ALL-YEAR SCHOOL CALENDAR

First Quarter	Begin -	Sept. 15	= 12 days
		October	= 23 days
	End -	Nov. 21	= 14 days
		Total	= 49 days

Two weeks interim - Thanksgiving

Second Quarter	Begin -	Dec. 8	= 13 days
		January	= 20 days
	End -	Feb. 27	= 19 days
		Total	= 52 days

One week vacation for
Christmas and New Year's

Two weeks interim

Third Quarter	Begin -	March 16	= 10 days
		April	= 19 days
	End -	May 29	= 21 days
			50 days

One week vacation, Easter

Two weeks interim

Fourth Quarter	Begin -	June 15	= 12 days
		July	= 23 days
	End -	Aug. 21	= 15 days
			50 days

Three weeks interim

Et Cetera

And there's much more of this same type of information that could be provided about the modern secondary school program to illustrate the fact that it is truly a part of "a new ball game." Let it be noted here, however, that enough's enough!

There are certain aspects of change in contemporary education and in a projection of the future of education that have particular meaning for school administrators. The following chapters deal with a highly selective grouping of these aspects under the titles of "Educational Technology," "Administrators As Management Specialists," "Schools That Are With It," and "The New Order Cometh."

CHAPTER II
EDUCATIONAL TECHNOLOGY

Instant Information

Imagine what it will be like when students are provided opportunity to work as desired, from individual stations linked to computers programmed to bring them the world's storehouse of knowledge in a problem-solving setting that will demand the most of their intellects while permitting them to work at their own speed according to their individual ability! When this occurs questions and answers will have equal status, and the process for discovering information will be at least as valuable to the learner as the information sought.

One of the most important goals of new instructional techniques is to help motivate learning through rewards growing out of the learning process itself - the feeling of satisfaction in defining and fulfilling one's own responsibility for one's own accomplishments - the pleasure that comes from achieving one's own objectives - the joy in new awareness of self, and through self, of others, as the personality grows stronger in "coping" with self-identified problems.

Some of the prime "essentials" (as distinguished from the "fundamentals" of reading, writing and arithmetic) in this new age are self-awareness, self-knowledge, sensitivity to the involvements of interpersonal relationships, a tolerance for change in both the personal and social world, a commitment to the well-being of all mankind, and a questing spirit.

Evolving educational technology will make mastery of the "fundamentals" easier and more effective, and will provide new means for learning the "essentials." This will occur because educational technology can provide superior methods for collecting, storing, utilizing information, and offer improved techniques for systematic involvement of individuals in learning processes.

Students of the future will have an awesome abundance of knowledge immediately available to them for their use in solving problems, and they will know how to use it. They will be "process" oriented and adept at constructing systems for inquiry that will bring to their use all available information, permitting them to use this information in individual ways to create new knowledge for themselves and others.

Eventually, there will be established great computerized information storage and retrieval systems serving regions of the nation and the world, that will make all accumulated information instantly available to students. "Instantly" is the proper word. Computers now work so rapidly that their reaction time is computed in "nano" seconds. The number of nano seconds in one second is comparable to the number of seconds in thirty-three years!

Techniques now under development will permit the transmission of 7,200 bits of information per second over present telephone lines, while another type of communications channel still quite experimental (utilizing the laser beam) will be capable, if perfected, of transmitting 220 million bits per second. With such a system it would be possible to transmit the entire content of Webster's New Collegiate Dictionary in less than one second!

Electronic data processing will not only provide instant information, it will provide opportunities for the development and use of new simulation techniques, computer analysis of instruction, computerized record storage, computer applications of clerical functions, computerized logistics for all sorts of business operations, computer-aided instruction, new procedures for student and teacher evaluation, new systems for analyzing educational management and finance problems, reliable predictive mechanisms, etc., etc. Limitations on the use of electronic data processing techniques are more a matter of programming (software) than they are a matter of equipment (hardware).

Computer-Assisted Instruction

Robert F. Bundy, a research fellow at the Center for Instructional Communications, Syracuse University, reporting research on computer-assisted instruction in the April, 1968 issue of the Phi Delta Kappan,[1] makes these, among other, points:

1. The computer learning program can make logical decisions and adjust to individual student differences with regard to learning sequence, depth and mode of material, and rate of progress.

2. The computer can record and manipulate a wide variety of learning data about the student during instruction.

3. The computer program can integrate and control a wide variety of audio-visual aids in the learning program, for enrichment and motivation. The computer can also provide dynamic real time displays of mathematical and physical

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[1] Bundy, Robert F., Computer-Assisted Instruction - Where Are We? Phi Delta Kappan, April, 1968. P. 424-429.

relationships, and relieve the students of a large number of routine calculations ...

4. A broad range of courses can be programmed for CAI. No known limits have been reported as yet to the kinds of subject matter or conceptual level that can be programmed. Well-structured subjects can, in particular, be easily handled by CAI tutorial systems.

5. Already existing curriculum materials can be readily used in development of computer courses.

6. Computer-simulated laboratories can be helpful for:

    a. Teaching lab procedures.

    b. Exposing students to a variety of analytical problems and physical processes in considerably less time than actual lab analysis.

    c. Providing an excellent adjunct to conventional instruction.

    d. Reducing student stress in learning by allowing freedom to manipulate objects normally not permitted, e.g., in clinical nursing.

(Readers may wish to obtain a better understanding about computers - what they are and how they work. Good sources are these: You and the Computer, A Student's Guide, published by General Electric in 1965; Computers, one of the "Understanding the Atom" series published as part of the U. S. Atomic Energy Commission's educational assistance program in January, 1968. A home study course in computer usage for teachers and school administrators is offered by Computer Usage Education, Inc. A free booklet may be obtained by writing Robert J. Rosen, Director of Marketing, Computer Usage Education, Inc., 51 Madison Avenue, New York, N. Y. 10010.)

One of the interesting experiments being conducted in CAI is in Philadelphia, Pa., where four high schools are using CAI for instruction in Biology.[2] The system consists of a central computer (a Philco 211) at Philco-Ford's Willow Grove, Pa., plant and four clusters - one at each of the four high schools. Each cluster consists of a Philco 102 computer, a cathode ray tube input/output terminal with light pen and keyboard, and a teletypewriter. The cluster computers are used primarily for the tutorial tasks, with the central computer being used for storing courses, developing curricula, evaluating statistics and keeping student and course records.

Each morning, course work is transmitted from the central computer to the cluster computers where the data is placed on disk memories. When a student sits down to his terminal, he types in his identification and the cluster computer begins presenting course work on the TV-like screen of the terminal. Students interact with the display by either typing an answer or pointing to the right item with the light pen.

The teletypewriter serves primarily as a report mechanism for use by the teacher. Each morning, the day's schedule and each student's assignment are printed out by means of the teletypewriter. When a student finishes an assignment, a progress report is printed out.

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2. Philadelphia Schools Use Computers as Tutors, Business Automation, March, 1968, P. 84.

The Responsive Environments Corporation offers computer-based learning systems tailored to fit any needs.[3] REC says of their "talking typewriter":

> "The 'talking typewriter' is a multi-sensory (sight, sound, tactile), multi-media, fully synchronized, computer-based learning system. It teaches the language arts (reading, writing, spelling, speech, and other skills.) Information is presented both audibly and visually, with any desired sequence of letters, words, paragraphs, instructions, or graphics, in as many as six languages.
>
> "It accepts and responds to simple as well as complex behavior from the learner who uses it. It provides a completely synchronized, multi-media environment that matches the multi-sensory paths to learning of each individual student.
>
> "Specifically, the 'talking typewriter' - with unending patience - responds to students of all ages. It presents the curriculum calmly and patiently. Its 'trial and success' method (the instrument will not accept an incorrect response and stimulates the student to keep trying) provides a constant flow of responses resulting in continuous success, building self-confidence in the learner."

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3. Taken from a Responsive Environments Corporation promotional folder. REC, Englewood Cliffs, New Jersey 07632. A twenty-minute 16 mm color-sound motion picture on the "talking typewriter" is available on a loan basis by writing to Responsive Environment Corp., 780 Welch Road, Palo Alto, California 94304.

One of the most sensational uses of the talking-typewriter has been with seriously handicapped students in a special school run by the Inner London Education Authority, London, England. Reporting on the school in a "Daily Telegraph Magazine" article, Gilta Sereny tells about five children in the school.[4]

One little girl, Maureen, could neither read, write nor draw any defined shape upon entering the school. After a relatively brief experience with the talking-typewriter, Maureen was typing, and reading, four words. Miss Sereny says, "For her this is equivalent to discovering Thesaurus." Maureen also began to think logically and in word sequences, which she had never done before. She is reported to have said to her mother one day, "God is dog the other way around."

Leland B. Newcomer, writing in the Fall, 1967 issue of the Journal of Educational Data Processing, says this about what he refers to as computer-based instruction:[5]

> "The implications of computer-based instruction really are most profound in that they indicate an approach to teaching and learning that is completely different from what has long been followed in the typical school. Now, at least, the learner really can become the center of the operation. It will be possible to individualize programs - something that the educational establishment

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[4] Sereny, Gilta, A Computer to Help Backward Children. The Daily Telegraph Magazine, London, England. Sept. 15, 1967.

[5] Newcomer, Leland B., A Look at Three Projects. Journal of Educational Data Processing. Fall, 1967. P. 255.

> has been working on for years but has made very little progress therein. Because of the ability to gain immediate feedback on learning and unlimited information on any number of individual students, the implications are frightening to the school administrator, for he must recognize the necessity for complete reorganization of time, space, material resources and human resources. The functions of personnel will be completely modified - with the teacher becoming a planner, motivator, stimulator, diagnostician, and evaluator ..."

Data Processing and School Management

Schools are a part of big business enterprise. Any school district has one of the largest payrolls in the area served. It also has one of the largest capital investments. Many schools serve more meals than any restaurant in town. A secondary school provides entertainment (from sports to drama) that rivals all other community sources of entertainment, even the "idiot box."

School business is big business, and the management of this enterprise has grown to be increasingly demanding. The tools used by commercial businesses lend themselves well for school use.

More and more school districts use various forms of electronic data processing (EDP) equipment to handle all sorts of record-keeping and to perform all sorts of functions. Student records, report cards, class schedules, payrolls, inventories, accounting, attendance, and other school tasks are accomplished via electronic devices.

Memphis, Tennessee, has used electronic data processing for record-keeping since 1951. In 1961 the school district automated class scheduling for junior and senior high schools. In 1962 the schools started data processing testing and guidance records.

School districts throughout California have done the same type of thing. Beverly Hills High School uses its own computer to help data process all sorts of information and records - cumulative records, test data, report cards, attendance, etc. The "Progress Report to Parents" is completed by the teacher on a "mark-sense" card with an IBM Electrographic Pencil, sent to the office, processed and sent home to parents. One operation includes printing of data for school use, permanent record, and parent report which is a "Data-Mailer" (a self-contained record slip inside a sealed envelope already imprinted with a mailing permit.) All of the forms come in a continuous roll, perforated for easy separation.

Information about data processing is available from many sources. A few of the companies from which information may be obtained are:

Burroughs Corporation
Detroit, Michigan 48232

Honeywell, EDP
Wellesley Hills, Massachusetts 02181

IBM
Armonk, New York 10504

RCA Instructional Systems
530 University Avenue
Palo Alto, California 94301

Optical character recognition (OCR) is gaining wide acceptance in the business community as a fast, accurate and relatively economical means of providing input from raw source documents. Equipment of this type may hold considerable promise for school use. It has already helped solve near-insoluble problems for various airlines and banks everywhere.

OCR units contain certain basic elements: a paper transport system, a recognition head, memory, code converter and control unit. David H. Shepard, President of Cognitronics, Inc., is credited with inventing the first usable optical reader in 1951.

The Chicago Board of Education began investigations into use of OCR in 1962, and after much trial and tribulation inaugurated a workable system.

EDP can help school administrators accomplish these tasks: budgeting, accounting, payroll, personnel records, purchasing, inventories, transportation scheduling and bus routing, registration, scheduling students and classes, assignment of substitute teachers, attendance reporting, health and other similar record-keeping, report cards, preparation of all sorts of lists (student schedules, teacher schedules, class schedules, room use schedules, etc.), keeping track of activity schedules, analyzing and recording test data, projecting enrollments, problem simulation.

System Development Corporation has developed various education systems:[6]

> School Organization Budget Planning (SPLAN) is designed to facilitate the development of the school district budget. It defines the cost of administration, instruction, health services, operation and maintenance of plant, and fixed charges.
>
> Programming Language for Interactive Teaching (PLANIT) is designed to enable teachers,

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6. For information, write System Development Corporation, 2500 Colorado Avenue, Santa Monica, California 90406.

counselors, administrators and students to communicate easily with a computer and has been used for the development of materials ranging from first grade reading to college-level statistics. Other applications include its adaptation for automated counseling interviews.

Educational Simulation (EDSIM) is a general system for computer simulation of instructional systems. EDSIM can help identify and solve problems related to a "continuous progress" school program, and can also provide projections of such things as how students will "spread out" in terms of accomplishment, requirements for special help - teachers and equipment - and the effectiveness of different procedures.

Matching Available Student Time to Educational Resources (MASTER) is intended to provide a computer-mediated scheduling capability. MASTER - a complex of six computer programs with associated electronic accounting machine processes - performs these tasks:[7]

1. Tallies number of students requesting each course.

2. Provides a conflict matrix of course demands.

3. Moderates time schedule.

4. Provides detailed record of each student's schedule and a summary listing of the number of students assigned to each section.

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[7] Lanham, Richard, American Education: New Tools for the Changing Task. SDC Magazine. Santa Monica, California 90406. April, 1967.

5. Prints individual student schedules showing student's name, courses and schedule, room and teacher.

6. Prints class rosters.

7. Provides material for teacher schedules and room utilization lists.

CHAPTER III

ADMINISTRATORS AS MANAGEMENT SPECIALISTS

The Authority Figure Vanishes

The function of school administration is to stimulate and secure action for performance of the educational task. In very recent times this could be accomplished reasonably well by the assertion of authority. Administrative position carried with it certain status and power which could be effectively used. It is pretty apparent today that authority is regarded differently than it was yesterday, and that, however defined, in the light of present history, it offers a most inadequate base from which to operate effectively.

All "authority" today is being put to question, even challenged, because an excellent job has been done of educating people to the idea of personal liberty, the right to question, the right to protest, and the power of democratic action. Not so good a job has been done of educating people to the essential nature of personal responsibility for individual acts, to acceptance of "due process," to a genuine regard for social as well as personal rights, and to acceptance of decisions democratically reached as the only alternative to either fascism or anarchy.

Authority is being challenged, and rightly so. This is a transitional period between the administration of enterprise from an authority base, to administration from a competency base. Decision-making is no longer the prerogative of an individual chiefly because of vested authority. These days, an individual is granted decision-making rights primarily because he has demonstrated the competency required to render good decisions. Where decision-making is still being performed by individuals relying mainly on authority, it proves disruptive. Where decision-making is performed by individuals whose competence is respected, it is productive.

As the school administrator's base for decision-making and securing action shifts from authority to demonstrated competency, the administrator will find himself in an entirely new role.

It should be stated that "competency" has always been a part of administrative qualification, but "authority" has been the primary back-up for decision-making. Now, as suggested above, this is changing, and in like manner the areas of expected competency are also changing.

Traditionally, administrative competence for the on-site administrator has been defined in terms that supposed him to be a curriculum specialist, something of a psychologist, a psychometrist, a guidance and counseling specialist, a community relations expert, a student activities specialist, a remedial reading consultant, an expert at personnel administration, and father surrogate for both students and staff. To perpetuate this supposition today is fantasy.

At one time, when things were simpler, perhaps the administrator did possess adequate competence in all areas. The obvious fact of the matter today is that many individuals on a school staff have competence that is superior to that of the administrator in given areas, and should be making the decisions affecting administration of the school program in these areas.

A Management Specialist

The area of competency that is of prime importance for the on-site school administrator of the immediate future is as a management specialist. A management specialist is one who is expert at helping people:

- Establish goals.
- Organize tasks.
- Evaluate results.
- Function effectively.

A management specialist will:

- Marshal resources.
- Supply logistical support.
- Maximize group and individual efforts via inspiration, challenge, and practical assistance.
- Establish effective communications between individuals and groups, staff and students, school and community.

A management specialist will know something about, among other things:

- System analysis.
- Interaction analysis.
- Group organization.
- New dimensions of decision-making.

The future on-site school administrator will be a management specialist, head of a management team that will perform the administrative tasks of the school.

The primary school task is to provide relevant learning experiences for individuals. The curriculum of the immediate future will be fluid, problem-oriented and student-centered, and the entire educational program will be goal-oriented in terms specified by behavioral objectives.

Within the structure provided by this task, the management specialist will help organize project teams of teachers, paraprofessionals, students, parents, and lay citizens to pursue the multiple goals of education. He will coordinate the activities of these teams, help provide support services and facilitate their efforts in every way. He will initiate and help maintain constant evaluation of all projects, programs and activities; represent the school on the district management team; be responsible for maintaining functional communications systems; and be chief of the "planning" project team that will be broadly representative and charged with keeping the educational program's goals functional and relevant.

System Analysis

System analysis involves the use of a set of methods, techniques and intellectual tools to provide organization for attacking certain kinds of problems. Problems most suited to system analysis are large, complicated, multi-faceted problems (such as the development of instructional design, program budgeting, curriculum analysis) that exist in the midst of a complex environment where one cannot approach the identified problem without due consideration of the environment.

The system approach to problem solving is (or should be) a highly creative approach that can respond with considerable flexibility to new information or circumstance discovered as progress is made toward solving the stated problem. There are general approaches to system analysis that can be used as a kind of basic beginning procedure.

- A precise and, at the same time, comprehensive statement of the problem should be made. Its boundaries should be carefully defined.

- A team of specialists and generalists should be formed to examine the problem, comprehend it, and organize to attack it. Objectives for pursuit of the study should be carefully prescribed.

- All factors relating to the problem should be identified as completely as possible. The team and/or individuals or groups especially qualified to do so should provide data as to how individual factors relating to the core problem affect it, can be modified to have a different effect, or altered to eliminate effect.

- The team should assess data received as a result of the factor analysis, and determine whether to seek additional data or proceed to suggest alternative solutions, or a solution.

- If alternative solutions are suggested, they should be tested (probably by simulation) to determine their feasibility and general acceptability. Recommendations may be made for accepting the optimum solution, as identified by the SA team, or alternatives may be presented for choice to the appropriate regulatory or policy-making body.

- If only one solution appears feasible as a result of the analysis, this solution, too, should be subjected to simulation test so that projected outcomes of application of the solution may be made a part of the final report.

Program budgeting affords a good example of system analysis.[1] Components of a program budgeting system are:

- Objective determination.
- Program statement.
- Analysis of alternatives.
- Budgeting procedures.
- Accounting procedures.
- Evaluation.

"Although there has been little theoretical development of program budgeting for education, many of the concepts developed by government and business have general application to education. Program budgeting for education is more than a fiscal system of allocating costs to specific programs of a school district. It is a management tool designed to provide information in a format to aid in the decision-making process. Information about the district's activities is presented in a framework enabling the public, school boards, and administrators to formulate and examine alternative methods of achieving their goals in light of scarce resources. The objectives of the district are the bases for allocating costs, and not the presently used 'objects' or 'functions.'"[2]

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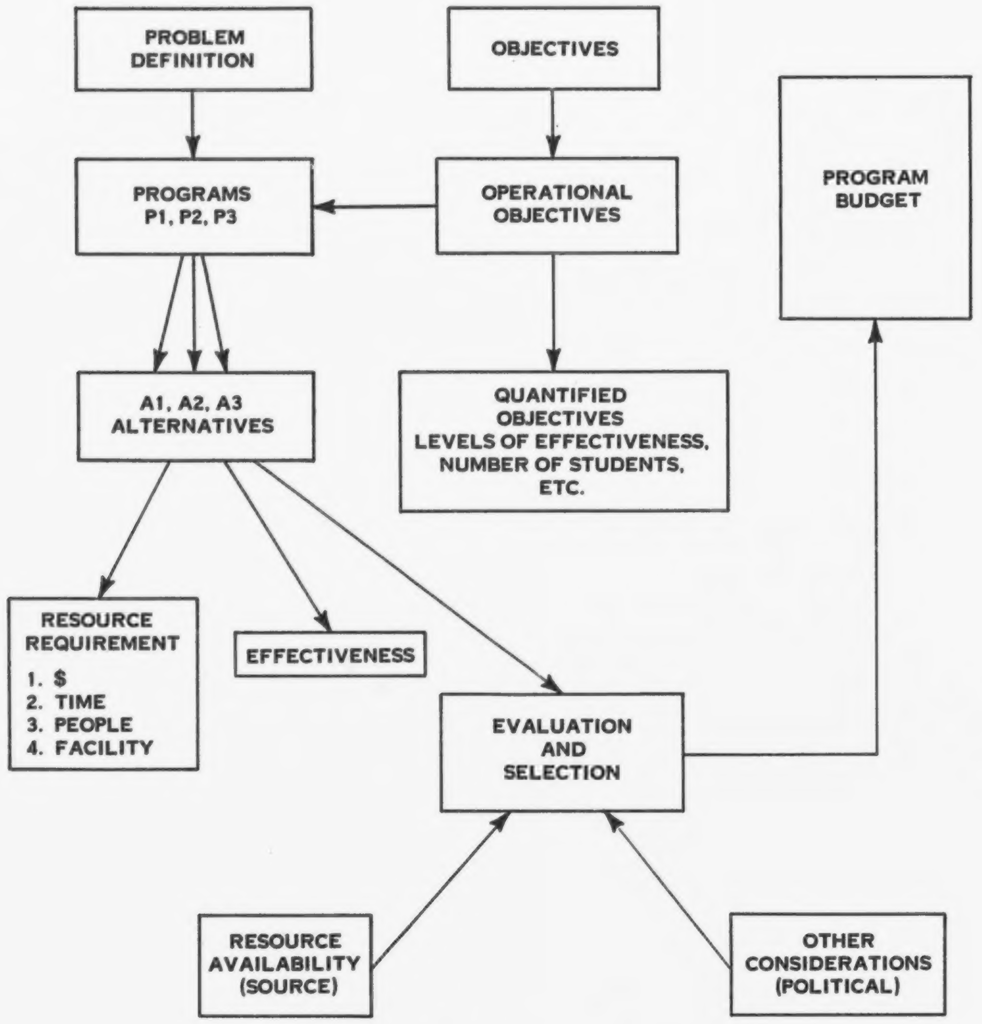
1. Report on Planning Programming Budgeting System for California School Districts. Advisory Commission on School District Budgeting and Accounting, California State Board of Education, Sacramento. June, 1968, P. 3.

2. Ibid, P. 3.

COMPONENTS OF A PROGRAM BUDGETING SYSTEM


PROBLEM DEFINITION
OBJECTIVES
PROGRAMS P1, P2, P3
OPERATIONAL OBJECTIVES
PROGRAM BUDGET
A1, A2, A3 ALTERNATIVES
QUANTIFIED OBJECTIVES LEVELS OF EFFECTIVENESS, NUMBER OF STUDENTS, ETC.
RESOURCE REQUIREMENT
1. $
2. TIME
3. PEOPLE
4. FACILITY
EFFECTIVENESS
EVALUATION AND SELECTION
RESOURCE AVAILABILITY (SOURCE)
OTHER CONSIDERATIONS (POLITICAL)

THE RAND CORPORATION
PRESENTATION TO THE
ADVISORY COMMISSION
LOS ANGELES, CALIFORNIA
JANUARY 25, 1968

The flow chart in Figure I, page 43, illustrates the various components of a program budgeting system.

Interaction Analysis

Alton C. Bartlett, in a 1967 article for the Journal of Applied Behavioral Science, said, "An organization is not just things - it is people. The two are interdependent. In order to make things run, people must interact. The more effective their interpersonal competence, the more efficiently things go."[3]

One of the most crucial points of interaction between people in the school situation is that point where students and teachers interact. At this point of contact important history is made for everyone concerned - students, teachers, parents, administrators, taxpayers. Every school administrator is aware of the importance of this point of contact, and every school administrator is frustrated to the point of despair at various times in his career over problems relating to establishing and maintaining student-teacher interaction as a felicitous, constructive experience.

Much has been said about student-teacher interaction. As a matter of fact, whole systems of methodology have been developed to instruct teachers in the techniques of interacting with students. Little of practical value has come of all the talk and the methodology until recent years when behavioral scientists have begun to study the problem and develop techniques

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3. Bartlett, Alton C., "Changing Behavior as a Means to Increased Efficiency," Journal of Applied Behavioral Science, Volume 3, Number 3, 1967.

for facilitating healthy student-teacher interaction.

One of the more interesting procedures devised has been that by N. A. Flanders. The Flanders system involves ten categories for recording teacher-student-verbal-response-behavior in the classroom. The system is used by an observer who makes indications of observed behavior within a specified time period, translates the indications to a matrix which provides insight into the teaching process. It helps teachers become more aware of certain kinds of behavior, how to become more sensitive to needs of students and the general classroom situation, and how to help meet social-emotional as well as intellectual student needs. Figure II, page 46, provides a listing of Flanders' categories.

Interaction analysis has provided some highly significant data related to learning processes. Studies have determined that students of teachers using "indirect" methods as distinguished from "direct," or "telling," methods scored higher than other students on achievement tests. It also has been demonstrated that more flexible teachers who are capable of shifting from direct to indirect approaches, and vice versa, have more success in improving student achievement than those teachers who are less flexible in their classroom behavior.

It would seem that interaction analysis and other techniques for improving interaction between students and teachers have a high potential for modifying student and teacher behavior. This being true, the school administrator needs to familiarize himself with this new area of professional knowledge and develop his own methods for orienting staff in its use. Good sources of information on this subject are:

- Bonney, Merl E. and Hampleman, Richard S.,

SUMMARY OF CATAGORIES FOR INTERACTION ANALYSIS**

TEACHER TALK	INDIRECT INFLUENCE	1.* Accepts Feeling: accepts and clarifies the feeling tone of the students in a non-threatening manner. Feelings may be positive or negative. Predicting or recalling feelings are included.
		2.* Praises or Encourages: praises or encourages student action or behavior. Jokes that release tension, not at the expense of another individual, nodding head or saying "um hm?" or "go on" are included.
		3.* Accepts or Uses Ideas of Student: clarifying, building, or developing ideas or suggestions by a student. As teacher brings more of his ideas into play, shift to category five.
		4.* Asks Questions: asking a question about content or procedure with the intent that student answer.
	DIRECT INFLUENCE	5.* Lecturing: giving facts or opinions about content or procedure; expressing his own ideas, asking rhetorical questions.
		6.* Giving Directions: directions, commands, or orders to which a student is expected to comply.
		7.* Criticizing or Justifying Authority: statements intended to change student behavior from non-acceptable to acceptable pattern; bawling someone out; stating why the teacher is doing what he is doing; extreme self-reference.
	STUDENT TALK	8.* Student Talk – Response: talk by students in response to teacher. Teacher initiates the contact or solicits student statement.
		9.* Student Talk – Initiation: talk by students which they initiate. If "calling on" student is only to indicate who may talk next, observer must decide whether student wanted to talk. If he did, use this category.
		10.* Silence or Confusion: pauses, short periods of silence and periods of confusion in which communication cannot be understood by the observer.

*No scale is implied by these numbers.

**Adapted from Flanders, N.A., *Teacher Influence, Pupil Attitudes, and Achievement.* Coop. Res. Monogr. #12, OE 25040. Washington: U.S. Dept. H.E.W., 1965.

Personal-Social Evaluation Techniques. The Center for Applied Research in Education, Inc., Washington, D. C. 1962.

- Amidon, Edmond J., and Flanders, Ned A., The Role of the Teacher in the Classroom, A Manual for Understanding and Improving Teachers' Classroom Behaviors. Paul S. Amidon and Associates, Inc., Minneapolis, Minnesota. 1963.

- Flanders, N. A., Teacher Influence, Pupil Attitudes and Achievement. Cooperative Research Monograph #12, OE 25040. U. S. Department of Health, Education and Welfare, Washington, D. C. 1965.

- Chapline, Elaine B., A Case Study in Interaction Analysis Matrix Interpretation. Teaching: Vantage Points for Study. J. C. Lippincott Company. Philadelphia and New York. 1968.

Group Organization

A group is a remarkable thing. It has no arbitrarily prescribed size. It can be large or small. It has no optimum pattern of organization. It can be highly organized or simply organized. It can have precise meaning, or practically no meaning. It is more than one, and yet not so much more as to destroy its identity as a unit.

Webster says a "group" is: two or more figures forming a design or a unit in a design; an assemblage of persons or things forming a separate unit, a cluster, an aggregation.

A human group has an especially unique characteristic. It can retain its identity, but it is never the same from one moment to the next. Individuals change through interaction one with another. They change from moment to moment in response to bombardment from various stimuli from the environment. As individuals change, the character of the group changes, and it becomes different than it was before. It is of crucial importance to understand this chameleon-like characteristic of a group, particularly when a group is involved in a conflict situation. It is a serious error to regard a group as "fixed" in its attitude or position. A group can be changed because it is constantly changing. Administrators need to fully comprehend this and take advantage of it.

Thoughtful group organization can help a group become more sensitive to change, more capable of making creative, positive adjustments to circumstance. It behooves the administrator circumscribed by group activity to know how to help organize and influence groups.

A group becomes viable when it has been created to accomplish a purpose understood and desired by the group. Groups created for purpose or purposes not consonant with the understanding or acceptance of group membership are stillborn and should be buried before they corrupt and poison the air. Schools are full of contrived groups (committees?) that never should have been created.

The first principle of group organization is that the group must have meaning for its members.

Group leadership can be specified by structure and/or provided by individuals who respond to circumstances that arise confronting the group. Group leadership is best specified by the group itself. Some groups may need formal leadership. Some groups function better in a kind of atomic arrangement where various components of the group, behaving in a fashion prescribed by personality, understanding and circumstance, act in mutually complementary fashion to secure action on the part of the group.

The second principle of group organization is that the group will function best if it provides its own leadership and is permitted to develop its own operational style.

Groups, as has been emphatically stated, are constantly changing organisms. Quite frequently they change themselves out of any reason for continued existence.

The third principle of group organization is that when a group fails to fulfill the purpose for which it was created, or has fulfilled its purpose and can find no other, it should be politely but firmly disbanded.

A group will function best if its members are alert to the fact that an individual needs to[4] be aware of certain insights and attitudes:

- Awareness of human behavior - why people act as they do.
- Sensitivity to group behavior - more conscious of group process, aware of subcurrents in groups.
- Sensitivity to others' feelings - more capacity for understanding feelings, more sensitive to needs of others.

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[4] Bunker, Douglas R. and Knowles, Eric S., "Comparison of Behavioral Changes Resulting from Human Relations Training Laboratories of Different Lengths," *Journal of Applied Behavioral Science*, Volume 3, Number 4. 1967.

- Acceptance of other people - able to tolerate shortcomings, considerate of individual differences, patient.

- Tolerance of new information - willing to accept suggestions, consider new points of view, less dogmatic, less arbitrary.

- Self-confidence.

- Comfort - relaxed, at ease.

- Insight into self and role - more aware of own behavior.

The fourth principle of group organization is that successful group operation is dependent upon the sensitivity and consideration of group members one for another, an understanding and acceptance of self and others, a tolerance for new information. A group should be provided experiences designed to help group members grow toward an understanding and acceptance of these insights and attitudes.

New Dimensions in Decision-Making

It is unnecessary to illustrate the fact that decision-making for the school administrator is a much more complicated affair than it was even ten years ago. Decision-making for the modern administrator is no longer the lonely function it once was. Today, an administrator has many more resources - information and people - than he used to have available in helping him collect, organize and interpret data for decision-making. The future promises to bring even more change to the process of making decisions.

Chris Argyris, Chairman of the Department of Administrative Sciences at Yale University, wrote an interesting article on decision-making in the November-December, 1967, issue of IBM's Think magazine.

Following are[5] some rather extensive quotes from this article:

> "Computer technology now makes it possible to generate and organize information that is beyond the capacity of one man to understand, much less to evaluate. He must develop a top management team to deal with the amount and complexity of information which may now confront him ...
>
> "Groups are valuable when they can maximize the unique contribution of each individual. Moreover, as each individual's contribution is enhanced, his commitment to the resulting decision is increased and internalized ...
>
> "Many presidents realize these facts (above) and have reported that they now focus more on creating and maintaining an alert, risk-taking, responsibility-enlarging, innovative, decision-making network among their key individuals ...
>
> "Organizations of the future will depend less upon coercive power and more on competence - on a strong management team ...
>
> "Once the basis of action shifts toward competence and knowledge and away from power, then many of the negative consequences of power will no longer be so imperative. ... In a world where power is used

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[5] Argyris, Chris, "How Tomorrow's Executives Will Make Decisions." Think, published by IBM. November-December, 1967. Volume 33, Number 6.

as the major force to get compliance, it is usually accompanied by the use of guilt and exhortation. (If you do not do what I ask you, you are bad and, therefore, I must punish you.) The basis for loyalty is fear and guilt. In any organization based upon information and competence, the basis for doing the right thing is that it works, it makes sense for the individual and the organization ...

"The organization of the future may eliminate superior-subordinate relationships and substitute for them the individual self-discipline arising from self-interest created by a competitive market mechanism within the system ... The organization of the future would be rid of internal monopolies which is the usual status of most traditional departments ... movement ... may be seen [toward] the increasing use of the project team and the matrix organization ...

"A matrix organization is designed less around power and more around who has the relevant information. A project team is created to solve a particular problem ...

"The organizations of the future will be a combination of both the old and new forms of organization. The old pyramided forms will be more effective for the routine, noninnovative activity that requires little, if any, internal commitment by the participants. However, as the decisions become less routine, more innovative, and as they require more commitment, the newer forms such as the matrix organizations will be more effective ...

"The future executive, then, must have two interrelated skills: he must be able to differentiate clearly between the old and

> new forms; he must know conditions under which he will use the different organizational forms. Moreover, he will need to become skillful in several different kinds of leadership styles, each consistent with a particular form. For example, an authoritarian leadership style is more consistent with the traditional structure. A participative style ... is one that develops risk-taking for the matrix organization ...
>
> "... accepting new challenges, taking risks, expanding one's competencies, etc. These are the very qualities that are central to the matrix organization. Thus the executive of the future will have to learn how to define internal environments that challenge people, stretch their aspirations realistically, and help them face interpersonal reality. Some examples are financial controls that reward excellence (not average performance,) work that is designed to use people's complex abilities. To put this another way, we need to develop competence in manipulating the environment, but not the people."

53/5

The purpose of these lengthy quotes, in case the reader has forgotten, is to illustrate "new dimensions in decision-making." They accomplish the purpose rather well. Decision-making in the future will be extremely sophisticated, based upon sophisticated understanding and knowledge, accomplished by a very sophisticated school executive working with and through an administrative team that is part of a highly sophisticated organization.

CHAPTER IV

SCHOOLS THAT ARE WITH IT

[Author's Note: Three programs are discussed in this chapter. Two are programs within individual schools, and one is a district program particularly emphasizing activities at the high school level. Their selection for discussion indicates the author's feeling that the schools involved are superior, the products of superior educational leadership and planning. The fact that other schools visited by the author are not mentioned is certainly no reflection on those schools. By choosing the three schools selected for discussion, the author has absolutely no intent of participating in the "best-schools-in-the-country" game. The schools were selected because of unique features of their respective programs, and only these features will be described. There will be no treatment of various innovative features in each of these schools - non-traditional scheduling, large group-small group instruction, resource centers, "open labs." These features are already "standard" in a sufficient number of schools to make description here unwarranted. The material that follows is reprinted - in large measure - from publications issued by the subject schools.]

I. ED W. CLARK HIGH SCHOOL, LAS VEGAS, NEVADA

Clark High School serves 2000+ students, cosmopolitan in the racial and economic composition of its student body. Despite the money that flows "through" Las Vegas, the schools are not "well off" financially. Clark High is relatively new, of unique design - some seven acres under a single roof - with a program incorporating much of the very latest in educational innovation. For information, contact Willard J. Beitz, Principal, Clark High School, 4538 Rancho Hills Drive, Las Vegas, Nevada 89109.

The Common Sense Curriculum

The curriculum of Ed W. Clark High School is built upon three basic assumptions:

A. Students enter high school with different cultural experiences, different physical skills, and different academic abilities.

B. Students do not all acquire knowledge at the same rate.

C. Each student may have individual areas of academic weakness and academic strength.

Common sense tells us that a high school should offer courses that give each student the opportunity to take classes suited to his ability and to move through those classes at a rate suited to his background.

At Clark, students are scheduled into classes with other students who possess similar achievement levels. Few classes at Clark are restricted to students of a certain age or grade in school. We feel that each student deserves to be treated as an individual and should receive an individualized education.

The Honor Card

Students who carry a 3.0 point or B grade average and have no serious disciplinary infractions are qualified to apply for the Honor Card. Holders of the Honor Card are permitted to move through the school as they and their instructors see fit. In practice, this means that a student may go to his English class to check in and pick up his assignment and then go to another academic area, such as a science lab, to work. The honor system permits the student to exert self-direction in the completion of assignments. It may mean that a student could spend most of a particular day working on a term paper or a science experiment. In return for honor privileges, some honor students are used in a tutorial capacity in various classes. Each nine weeks a student's academic standing is re-evaluated to determine if he meets Honor Card standards. An honor study area is provided by the school and maintained by the honor students. Infractions of the honor code are tried by an Honor Court composed of honor students.

Index Registration

It is the philosophy of the staff of Clark High School that the curricular offering for each school year will be a reflection of the needs and abilities of the student population. We assume that we are obligated to adjust our curriculum on a yearly basis after analysis of the intellectual composition of our incoming students.

We concluded that our first consideration must be the construction of an instrument that would analyze a student's previous performance and yield a score that would serve to estimate the academic potential of each student and also provide a composite view of our students. This instrument would provide information that we would then use to do the following:

1. Determine the number of students in the various ability levels and construct courses in direct proportion to the number.

2. Assign an index score or scores to each class to indicate the estimated level of academic proficiency necessary to

enter and succeed in that class.

3. Investigate the relationship between failures and index scores in each class.

The construction of the Index System was based upon the following assumptions:

1. Standardized test results and previous academic achievement in school are factors that can be used in the academic placement of students.

2. The academic skills necessary for success in various courses can be determined.

3. It is of value to use a consistent method of student academic placement from year to year.

4. Follow-up studies can establish the degree of success attained in academic placement in each class.

5. Probability of success in each class can be determined for each student.

It was felt that success in most classes at Clark High could be estimated by considering a student's previous performance in Math, Reading and English. In order to convert the available test data and academic grades into a workable form, it was decided to design a statistical formula that would consider numerous test scores and grades on a weighted basis and arrive at a single 1 to 10 index score in Math, Reading and English.

Each class was then studied to determine what index score in Math, Reading and English was to be considered adequate for entrance to that class. The index levels of students failing classes would then be analyzed to determine if a common index pattern emerges.

It should be noted that the index system is not designed to prevent students from entering classes, but rather to provide each student with opportunity to view the predicted skill level necessary to enter that particular class. No student is prevented from registering for any class as a result of index deficiency. However, the student is required to submit a curricular contract for a class that requires a higher index level than he possesses.

A sample index source card is shown in Figure I, page 60.

Figure II, on Page 61, shows the distribution of index source scores in Math, Reading and English.

Figure III, on Page 62, illustrates Clark High School's student pre-registration card.

FIGURE I

SAMPLE INDEX SOURCE CARD

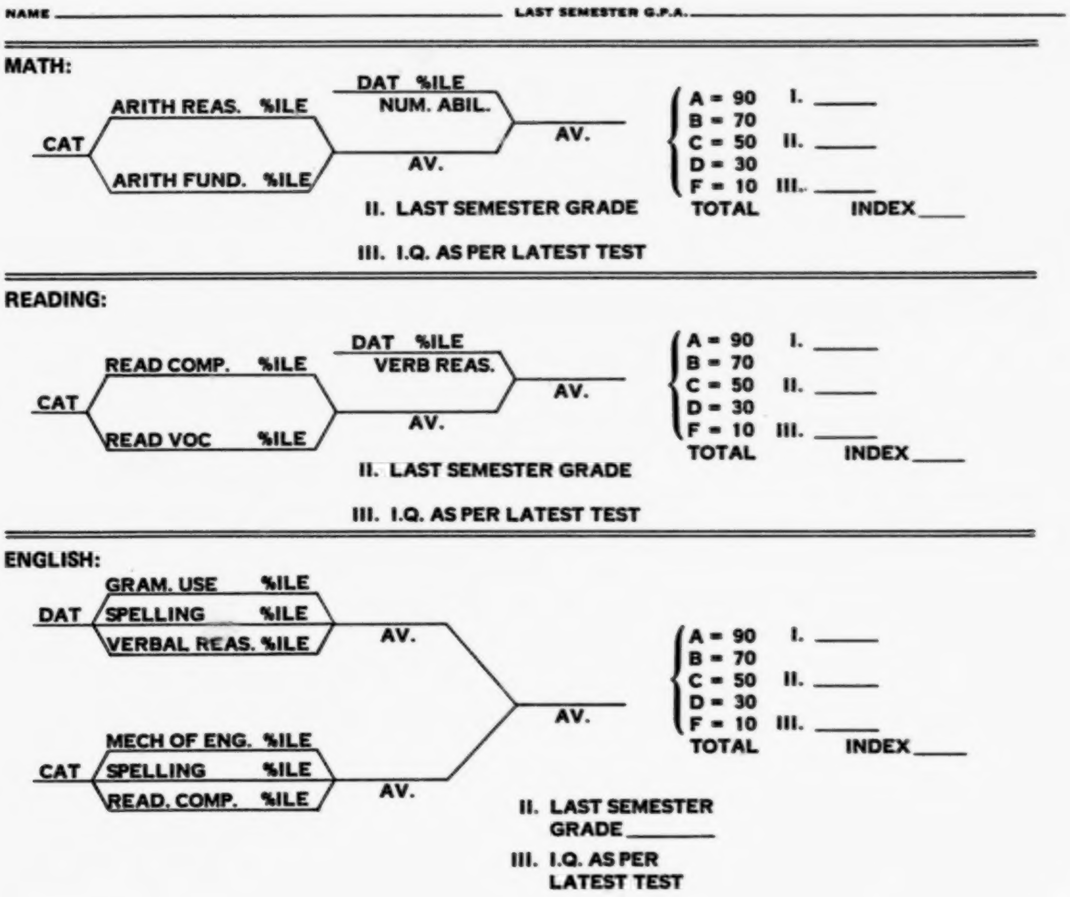
NAME
LAST SEMESTER G.P.A.
MATH:
CAT
ARITH REAS. %ILE
ARITH FUND. %ILE
DAT %ILE
NUM. ABIL.
AV.
AV.
II. LAST SEMESTER GRADE
III. I.Q. AS PER LATEST TEST
A = 90
B = 70
C = 50
D = 30
F = 10
TOTAL
I.
II.
III.
INDEX
READING:
CAT
READ COMP. %ILE
READ VOC %ILE
DAT %ILE
VERB REAS.
AV.
AV.
II. LAST SEMESTER GRADE
III. I.Q. AS PER LATEST TEST
A = 90
B = 70
C = 50
D = 30
F = 10
TOTAL
I.
II.
III.
INDEX
ENGLISH:
DAT
GRAM. USE %ILE
SPELLING %ILE
VERBAL REAS. %ILE
AV.
CAT
MECH OF ENG. %ILE
SPELLING %ILE
READ. COMP. %ILE
AV.
AV.
A = 90
B = 70
C = 50
D = 30
F = 10
TOTAL
I.
II.
III.
INDEX
II. LAST SEMESTER GRADE
III. I.Q. AS PER LATEST TEST

FIGURE II

CLARK HIGH SCHOOL INDEX DISTRIBUTION

Shown below is the distribution of index sources scores in math, reading, and English and the percent of the student body that falls within each of the indices. Clark High is composed of a "normal" range of student abilities, thus determining the shape of the index range.

INDEX	MATH	READING	ENGLISH	% OF STUDENT BODY
10	300 & ABOVE	220 & ABOVE	300 & ABOVE	4%
9	280	210	280	6%
8	260	200	270	7%
7	240	190	250	12%
6	210	170	210	20%
5	180	140	180	20%
4	150	120	170	12%
3	130	110	140	8%
2	110	80	110	6%
1	109 & BELOW	79 & BELOW	109 & BELOW	4%

The index range of the school is used to determine the level of classes that should be offered to accurately meet the curricular needs of the student population.

SAMPLE STUDENT PRE-REGISTRATION CARD

STUDENT NAME________________________________

INDEX SCORES

MATH______________ READING____________ ENGLISH__________

FIRST SEMESTER G.P.A.____________________ CLASS OF__________

TEACHER'S VERIFICATION IS REQUIRED FOR EVERY CLASS INCLUDING ALTERNATE SELECTIONS.

CLASSES	NO.	TEACHER'S VERIFICATION
1.__________	______	______________
2.__________	______	______________
3.__________	______	______________
4.__________	______	______________
5.__________	______	______________
6.__________	______	______________
ALTERNATE SELECTIONS		
1.__________	______	______________
2.__________	______	______________
3.__________	______	______________
4.__________	______	______________

____

COUNSELOR'S SIGNATURE

THE PRE-REGISTRATION CARD PERMITS THE STUDENT AND HIS TEACHERS TO VIEW HIS INDEX SCORES AND CURRENT GRADE POINT AVERAGE. THE STUDENT USES THIS INFORMATION TO AID HIM IN THE SELECTION OF CLASSES FROM THE COURSE CATALOGUE.

SCIENCE

The following pages represent the science classes offered at Clark. The index scores for each class are shown below the course description. The number of classes offered in each index range is determined by the index composition of the total school. Each department must offer courses in direct proportion to the index breakdown of the student population.

Exploration of Science (Course No. 156)

This course is divided into four sections: Biology, Space Science, Practical Chemistry and Physics. This course is designed for students who will not take advanced courses in science. Topics will be of practical nature with some laboratory investigation. This course will fulfill the requirements for graduation.

Recommended Index: 2 semesters
M- 1-6 1 credit
R- 1-6
E- 1-6

Physical Science (Chemistry-Physics) (Course No. 157)

This course is designed as an introductory course for students with a limited math background, interested in chemistry and physics. Laboratory experiences will be used to prepare the student for future study in chemistry and physics as used in all science areas such as engineering, medicine, etc.

Recommended Index: 2 semesters
M- 4-7 1 credit
R- 4-7
E- 4-7

Basic Biology (Course No. 158)

A basic laboratory course for students who have shown average or below-average performance in previous science courses. Satisfies college entrance requirements for a lab science.

Recommended Index: 2 semesters
M- 4-6 1 credit
R- 4-6
E- 4-6

Biology (BSCS) (Course No. 159)

A laboratory course designed to consider cells, micro-organisms, plant and animal life, genetics, evolution and ecology. Satisfies college entrance requirements for a laboratory science.

Recommended Index: 2 semesters
M- 5-10 1 credit
R- 5-10
E- 5-10

Basic Chemistry (Course No. 164)

This course is designed to study fundamentals beneficial in the new horizons in this technical age. Studies in chemistry, engineering, and related science. Prerequisites: Algebra.

Recommended Index: 2 semesters
M- 4-6 1 credit
R- 4-6
E- 4-6

Chem Study (Course No. 165)

This course is basically for students who desire to continue in studies in the fields related to chemistry such as medicine, engineering, biological sciences and electronics.

Excellent college preparatory course. Extensive laboratory investigations. Prerequisites: Algebra. (Cannot have taken Basic Chemistry.)

Recommended Index:
M- 6-10
R- 6-10
E- 6-10

2 semesters
1 credit

Advanced Chemistry (Course No. 166)

This course is for the college-bound student to help him gain familiarity in scientific methods and models, and with concepts such as uncertainty in measurements, phase changes, chemical reactions, energy, molecules, the mole, conservation of atoms, kinetic theory, and electrical nature of atoms and ions and chemical periodicity. Prerequisites: Chemistry and Algebra.

Recommended Index:
M- 7-10
R- 7-10
E- 7-10

2 semesters
1 credit

Basic Physics (Course No. 167)

This course will concentrate on developing the fundamental principles of physics to aid the student in the solution of practical problems involving physical principles and keeping abreast with new scientific developments.

Recommended Index:
M- 4-6
R- 4-6
E- 4-6

2 semesters
1 credit

Evaluation of Index System

The past two years, Ed W. Clark High School has used achievement test scores, aptitude test scores, intelligence test scores and subject grades, combined together, to provide a score which has been designated as an index of potential academic success. These indices are determined in three areas: English, Reading and Mathematics.

The indices have been used by the faculty to construct classes that accommodate the year-by-year variations in the abilities of the student body. The faculty has also been able to use these indices in counseling and advising individual students regarding their choice of subjects.

The students have been able to use the index by comparing their scores with the recommended index listed in the curriculum guide and then selecting subjects which correspond with their indices.

The parents are better able to help their children in the selection of subjects by being provided with their son's or daughter's index scores and recommendations concerning the type of classes best suited to students in various index ranges.

Presently the information provided in this manner has been accepted by students, parents and teachers as being useful and meaningful.

II. HUGHSON UNION HIGH SCHOOL, HUGHSON, CALIFORNIA

(Hughson High is a school of 500+ students located in a rich agricultural belt of the great San Joaquin Valley. It struggles for financial support just as do most schools in farm communities, and operates in a traditional plant that is gradually changing its appearance via extensive remodeling. For information, contact Robert R. Reeder, Superintendent, Hughson Union High School District, P. O. Box 98, Hughson, California 95326.)

A Restructured Program

The full thrust of the Hughson program is to move as rapidly as possible toward individualization of instruction that will permit students to make many choices, decisions in a continuous progress program that will give them these things, among others, at graduation:

1. A salable skill.
2. Qualifications for post-high school education at various levels.

The primary vehicle used at Hughson High to move toward an increasing degree of individualized instruction has been the Learning Activity Package (LAP).

The LAP

A Learning Activity Package is developed and used in the following manner:

- A subject area department will establish scope and sequence for the curriculum that is its responsibility.
- A specific segment is selected for development into a LAP.
- The LAP is organized in this fashion:

  1. Rationale - a statement to provide

context for the material and experiences to follow.

2. Primary and Secondary Ideas - to specify the subject matter to be covered.

3. Instructional Objectives - a statement of what the student is expected to learn, how well he will be expected to do it, and within what limits he will be expected to work.

4. Pretest - an opportunity for the student to find out what he does and does not know about the subject.

5. Individual Instructional Objectives and Activities - a presentation of learning experiences related to specific objectives.

6. Instruction Sheets (where applicable) - this is actual subject matter for student study.

7. Final Examination - a final check on student's attainment of desired performance.

- Material in the LAP is both required and optional.
- Upon completion of a LAP, the student is tested. If he is unsuccessful, he is recycled through specific parts of the package and is re-tested.

As of the close of the school year '67-'68, Hughson had completely restructured and "packaged" the entire ninth grade. This included:

Course	No. of LAPS
English	7
Social Studies	6
Math	11
Science	9
Electricity	2
Drafting	4
Home Economics	4
General Shop	5
Act	2
Agricultural Science	5
General Business	5
Girls' P.E.	3

In addition to the ninth year level, LAPS have been developed in the following:

Course	No. of LAPS
American Literature	7
Speech	2
Chemistry	2
Senior Math	3
Driver Education	3
American Government	3
Auto Shop	1
Electronics	1
Library Science	1
Junior High (all areas)	32

A Zero Reject School

An amazing thing is happening at Hughson. They are developing into a truly "zero reject" school. Because of the recycling process used with each LAP there have been no failures at the ninth grade level. There has been a 50% decrease in "D" grades.

The dropout rate has been dramatically affected. There was only one dropout during the past school year, and that individual has currently re-enrolled. Thirteen students returned to school after dropping out in prior years and eleven graduated with the "Class of '68."

Open Laboratories at Night

Tied in with the overall Hughson approach to education is a community program that pays good dividends. Adults in the community are permitted to work in open laboratories at night to develop or improve skills they may need on the job. Twenty adults worked during the last year in the electronics laboratory for three hours a week under an experimental program operating in the same way as regular classes.

From this and other experiments in community involvement has developed a work corps of parents who type, supervise laboratories, microfilm records, operate the testing center, and serve as tour guides for school visitors. Some sixty parents furnish in excess of five hundred hours of free service each month to staff and students.

The "Open Lab" night program has also been popular with regular students. Some one hundred twenty students (an average attendance figure) have made regular use of the reading lab, electronics lab, science lab, homemaking lab, and various resource centers.

SOUST

The "Scheduling of Unscheduled Time (SOUST)" has been Hughson's answer to problems concerned with helping students make productive use of "free" time. One of the "hang-ups" in most modular scheduling programs involves the "use-abuse" of free time by both students and faculty. The philosophy is good - to let individuals have unscheduled time to pursue activities of particular meaning and interest. To make productive use of such time calls for certain maturity on the part of both students and staff. Unfortunately, too many schools using modular scheduling are not helping students and staff develop the maturity necessary to function in accord with the philosophy of this system.

The Hughson program calls for all free time for students to be scheduled into resource centers according to the need and/or interest of the students. Blocks of study carrells are assigned to each teacher, and teachers are available during their free time for student consultation. Scheduling to resource centers is done daily on the basis of student and teacher needs.

An Actual LAP

So that the reader may obtain a better understanding concerning LAPS, the following material presents excerpts from a LAP being used at Hughson titled "Introductory Business for Everyday Living." Reproduced are:

- Table of Contents
- Why Study This?
- Pretest
- Instructional Objective Ia and Ib

TABLE OF CONTENTS

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LAP Directions 7
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Evaluation 19

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Evaluation 21

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Instructional Objective #5 63
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WHY STUDY THIS?

All businesses depend on consumers, producers, and those who market goods. The way in which each works together is part of our economic system.

In this LAP you will study our American Economic System. You will discover why we have an economic system, how it operates, and how government affects the system.

This will be done by learning the economic vocabulary, relating the terms to your environment and to "make believe" situations.

In all objectives you should try to be improving your writing skill, and your ability to use math in solving problems.

Primary Idea

The main idea to be gained from this Learning Activity Package is how business and our economic system affect you.

Secondary Ideas

1. The reasons every society must have some type of economic system.
2. The kind of economic system we have in the United States.
3. The different types of business organizations and the reasons for them.
4. The reasons some economic decisions are made through government even in a free enterprise system.
5. The function of money in our economic system.

Remember How to Use This LAP!

This is the second LAP in the series. It is divided into five (5) Instructional Objectives. Each objective has three steps.

1. The Instructional Objective: This tells you what skill or idea you will be expected to know or obtain from each objective.

2. The Activities: FUN, FUN, FUN.

   Required: These are activities all students must complete.

   Optional: These are activities many of the students may complete to learn more about the objective. (Extra credit will be given for the go-getter who completes one or more activities successfully.)

3. The Evaluation: Did you learn what you wanted to? This will measure what you remember.

Remember Your LAP PRE-LAP.

It will help you if you need to be reminded of what you are to do next.

STUDENT EVALUATION CHART

SECONDARY OBJECTIVES	"SHOULD TIME"	TIME TAKEN	OPTIONAL ACTIVITIES SATISFACTORILY COMPLETED	EXTRA CREDIT	QUANTITY	QUALITY	INSTRUCTIONAL OBJECTIVES EVALUATION	FINAL AVERAGE
							TOTAL OF AVERAGES SCORE # OF INSTRUCTIONAL OBJECTIVES FINAL AVERAGE	

PRETEST

Complete the Pretest, check your answers on Page 74. If you have missed 4 or fewer, see instructor for Inst. Obj. Evaluation. If you missed 5 or more, proceed to Instructional Objective #Ia or Ib.

___I. Of the following, which is LEAST important to explaining the great productivity of the United States as compared with that of the world? (a) greater use of mass production, (b) greater use of power-driven machinery, (c) large population, (d) high purchasing power of the people.

___2. Working hours have been reduced in the United States primarily because (a) the productivity of workers has been increased, (b) the government has issued more money, (c) the American worker is content with a low standard of living, (d) the desire for leisure has resulted in less production.

___3. When consumers buy a manufactured product in mass quantities, the cost of making the product will probably (a) rise, (b) fall, (c) remain the same, (d) be greater than the price of the product.

___4. The American economy differs from the Russian in that (a) it allows more freedom to individuals, (b) it provides for planning of all production by the government, (c) it makes no provision for the welfare of consumers, (d) the government takes no part in economic affairs.

___5. In the United States, decisions as to what goods shall be produced are generally based on (a) government plans, (b) desires of businessmen, (c) consumers' preferences, (d) engineers' estimates of what the economy needs.

___6. Profit is (a) the total income of a business, (b) the amount of money a businessman can save, (c) the income of a government enterprise, (d) the amount of income retained by a business after all costs of running the business are paid.

___7. On the free market, prices are fixed by (a) small groups of producers, (b) government agencies, (c) consumers' decisions, (d) competition among consumers and among producers.

___8. The free market is (a) a public marketplace, (b) a government-owned building, (c) an economic institution, (d) a collection of non-profit-making retail stores.

___9. In a system of free, private enterprise, most production is carried on by (a) privately owned business firms, (b) state-owned corporations, (c) federal agencies, (d) cooperative organizations.

___10. Which of the following is not a characteristic of our economy? (a) freedom to own property, (b) competition, (c) freedom to earn a profit, (d) no government regulation on economic activity.

___11. Government regulation of business (a) should be in the public interest, (b) is forbidden in the Constitution, (c) results in a lower standard of living, (d) is carried on only in Communist nations.

___12. Our type of economy is sometimes referred to as capitalism because (a) capital is used for production, (b) capitalists receive most of the income, (c) private ownership of capital is one of its characteristics, (d) all capital is owned by government.

___13. In choosing a location for a manufacturing plant, which of the following would you not consider? (a) nearness to markets, (b) nearness to raw materials, (c) transportation facilities, (d) fertility of the land.

___14. Rent is to land as interest is to (a) labor, (b) capital, (c) management, (d) government.

___15. The real goal of our economy is to increase (a) personal and corporate savings, (b) expenditures by government, (c) expenditures for personal consumption, (d) private investment.

Define or Illustrate:

16. Standard of Living

17. Mass Production

18. Real Wages

19. Free Economy

20. Gross National Product

INSTRUCTIONAL OBJECTIVE #IA AND IB

The student will be able to understand the effect our economic system has on individuals and business enterprises by:

- a. Defining a given list of economic terms.
- b. Associating terms to given statements or problems.
- c. Relating use of terms to given business situations.

Required Activities:

Special: View film "Allocating our Resources." (Time to be announced.)

Ia. Read General Business, 3rd Edition, pages 26-31.

OR

Ib. Listen to Tape #4 from General Business, 3rd Edition, pages 26-31, and follow along in book.

2. Complete Vocabulary and Understanding on Page 15 in this LAP.

3a. Answer Sharing Your Opinion and Experiences in writing, Page 31 in textbook.

OR

3b. Sign for and attend small group to discuss Sharing Your Opinion and Experiences, Page 31 in textbook.

4. Complete Projects and Problems on Pages 16, 17A-17B.

5a. Write answers to Challenging Problems #1 (all parts), Page 33 in text.

OR

5b. Using the bar graph and the form on Page 18, prepare a table showing the information given on the graph.

Does your grade need improving? Try one or more of these:

Optional Activities:

1. Make a poster showing what our economic system includes and the relationship of one to the other. (Workers, business enterprise, etc.)

2. Using both editions of General Business and additional reference books, read and define the difference between natural resources and productive resources. List three of each of the resources, and explain the effect of each on your community.

3. Read Pages 12-20, Part One in Our American Economy and answer questions 1-5 on Page 20.

4. Any other activity that will interest you and help meet the objective.

VOCABULARY AND UNDERSTANDING

Vocabulary

Read the five statements below at the right; then, for each statement, select from the column at the left the term that best matches it in meaning. Write this term in the space provided.

consumer demand

economic system

free enterprise

planned economy

productive resources

1) The arrangements a country makes for using its productive resources:

____

2) The means of production; also called the factors of production:

____

3) The buying done by individuals and families:

____

4) A system in which the government makes most economic decisions:

____

5) A system in which individuals and businesses make their own economic decisions:

____

Understanding

For each of the questions below, indicate your answer by circling Yes or No:

1) Is economic system another name for business? Yes No

2) Is labor a productive resource? Yes No

3) Do a nation's available productive resources limit the amount of goods and services it can produce? Yes No

4) Must rich nations economize with their productive resources? Yes No

5) Are all economic systems alike? Yes No

6) Does efficient use of productive resources increase the amount a nation can produce? Yes No

7) In the United States, are most decisions regarding the use of productive resources made by the government? Yes No

8) Do consumers influence the buying decisions of business enterprises? Yes No

9) Do consumers decide how goods are produced in the United States? Yes No

10) Is a planned economy the same as a free enterprise economy? Yes No

PROJECTS AND PROBLEMS

1) List as many natural resources as you can that are abundant in the state where you live.

a. ____________________

b. ____________________

c. ____________________

d. ____________________

e. ____________________

f. ____________________

g. ____________________

h. ____________________

2) With your parents' help, list ten items the typical family wants today that would not have been included in such a want list when your parents were your age.

a. ____________________

b. ____________________

c. ____________________

d. ____________________

e. ____________________

f. ____________________

g. ____________________

h. ____________________

i. ____________________

j. ____________________

3) For each event named below, explain briefly how it would affect the operation of our economic system.

Event	Explanation
Water Shortage	
School Dance	
Population Increase	
Christmas Parade	
Football Game	

3) (Continued)

Event	Explanation
Exploration of Outer Space	
Longer Paid Vacations for Workers	
World War	
Newspaper Strike	
Political Campaign	

4) Facts stated in numbers are called statistics. Statistics are often presented in tables. The table below, for example, gives statistics about the gross national product (GNP) of eight countries in a recent year. Using these statistics, answer the questions following the table.

GROSS NATIONAL PRODUCT FOR EIGHT COUNTRIES

	Gross National Product	
	Total (Billion Dollars)	Per Capita (Dollars)
Federal Republic of Germany	69	1,296
France	58	1,268
Ghana	2	225
Italy	32	645
Japan	39	416
Sweden	12	1,631
United Kingdom	71	1,345
United States	505	2,817

a. Which of the countries listed had a total gross national product closest to that of the United States? __________

b. How did the gross national product of the Federal Republic of Germany compare with that of the United Kingdom? __________

c. Which country had the smallest gross national product? __________ What reason can you give for its GNP being small?

____

d. The GNP of the United States was approximately how many times the GNP of France?

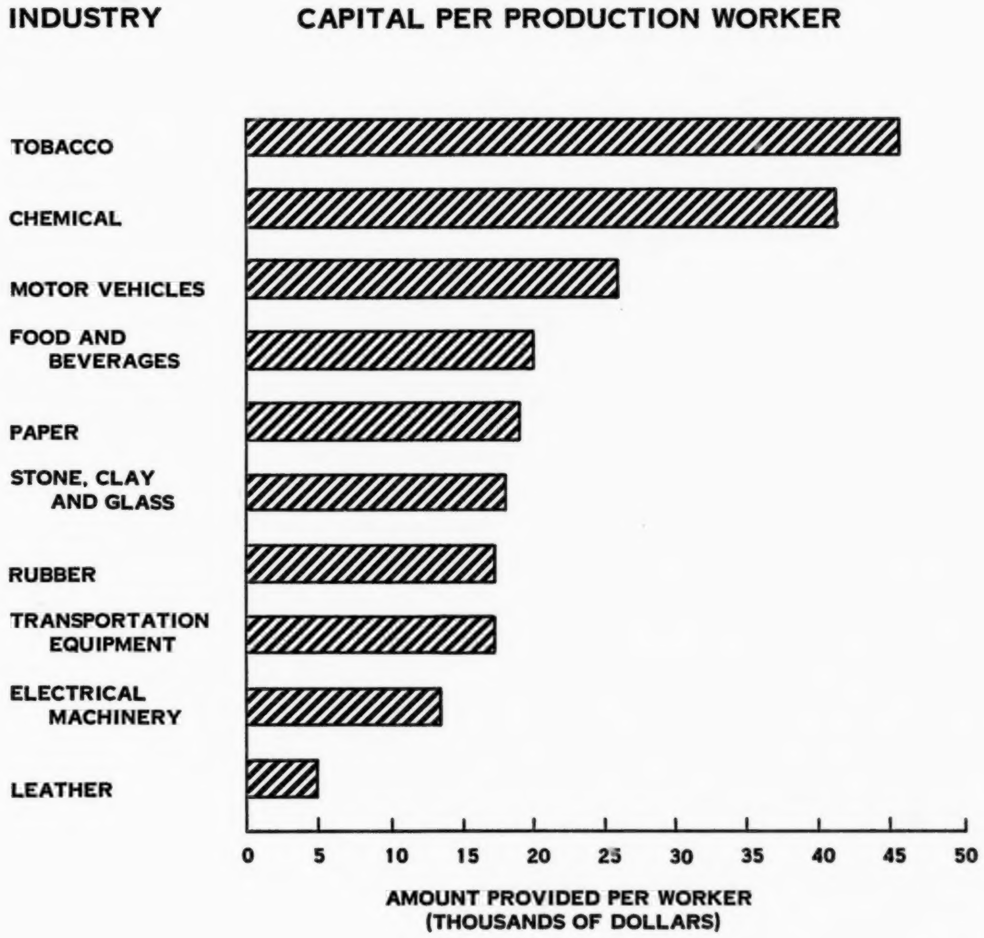
____

e. What does "per capita" mean? __________

f. Which country had the largest GNP per capita? __________

g. Which country had the second largest GNP per capita? __________

h. Can you always tell from a nation's total


INDUSTRY
CAPITAL PER PRODUCTION WORKER
TOBACCO
CHEMICAL
MOTOR VEHICLES
FOOD AND BEVERAGES
PAPER
STONE, CLAY AND GLASS
RUBBER
TRANSPORTATION EQUIPMENT
ELECTRICAL MACHINERY
LEATHER
0
5
10
15
20
25
30
35
40
45
50
AMOUNT PROVIDED PER WORKER
(THOUSANDS OF DOLLARS)

GNP whether its GNP per capita is high or low compared to other countries? __________

i. From the information given in the table, which country would you assume had the higher standard of living -- France or Sweden? __________

j. Of the countries listed, which would you assume had the highest standard of living? __________

k. In addition to its GNP per capita, what other important factor determines a country's standard of living? __________

SUPPLEMENTARY PROBLEM

Using the form provided below, prepare a table showing the information given on the bar graph on Page 86, opposite. When reading a graph of this kind, you will find it helpful to use a ruler, a card, or a sheet of paper from a small notebook. Place the ruler or card so that one edge is the base line of the graph and the other edge is up against the end of whichever bar you are reading.

CAPITAL PER PRODUCTION WORKER

Industry	Amount Provided Per Worker (Thousands of Dollars)

NOW! HOW MUCH DID YOU ASSIMILATE?

Evaluation

When you have completed all required activities and those optional activities you wish, write answers to the following:

I. Define the following terms:

   a. Consumer demand.
   b. Productive resources.
   c. Competition.
   d. Free enterprise.

II. Consumer demand refers to the buying done by individuals and families. How does this affect businesses who produce goods and services?

See instructor. If you have answered four of the above five questions correctly and think you know this material, go on to Instructional Objective 2A.

Required Activities: 1b

Special: See film "Allocating our Resources."

1. Read Our American Economy, 2nd Edition, pp. 1-20. (This is a text.)

*2a. Answer in writing, "Checking Up Questions" 1-5, p. 20, Our American Economy. (This is a textbook.)

OR

*2b. Sign up and attend small group discussion on the above questions.

3. Using a graph or presentation, show factors

that account for the high productivity of our economy.

Optional Activities:

1. Read General Business, 3rd Edition, pp. 26-31.

2. Complete Projects and Problems #1, #4 and #5 on pages 32-33 of General Business, 3rd Edition.

3. Draw a flow chart which shows at least three factors that influence our "Standard of Living."

4. Any other activity that will help you meet the objective.

HOW MUCH "SOAKED IN"?

Evaluation!

When you have finished all required activities and those optional activities you wish, write answers to the following:

Define - Associate - Relate

Standard of Living

Mass Production

Real Wages

Free Economy

Gross National Product

If you think you have "command" of the above terms, go on to Instruction 2b.

III. NISKAYUNA PUBLIC SCHOOLS

(The town of Niskayuna lies along the eastern edge of the city of Schenectady, New York, and is a blend of suburban and rural characteristics, well off financially. The high school of some 1400 students sends approximately ninety per cent of its graduating classes to institutions of higher education. For information, contact Joseph H. Oakey, Director of Research and Development, Niskayuna Public Schools, 1626 Balltown Road, Schenectady, New York 12309.)

The best description of that part of the Niskayuna program of interest for this report can be given by excerpts from an ESEA Title III project proposal, "Independent Study, A Continuous Program from Elementary through Secondary Education." The project was approved and work begun in 1966.

OPERATION OF THE PROJECT

A. METHODS, TECHNIQUES AND PROCEDURES TO ACCOMPLISH PROJECT OBJECTIVES

OBJECTIVE 1: Set up a continuous independent study program for grades K - 12 within the Niskayuna School District.

PLAN: During the first year of the project, the following schedule of activities will be followed. (See Objective 2, following, for more information on support personnel and resource materials.)

1. BEFORE SCHOOL STARTS

(a) Teacher Workshop: Prior to the opening of school in the fall of 1966, a two-day workshop will be held to discuss the program. A general orientation and special sessions will be held for those of the faculty who will be immediately involved in the program. Approximately 15-25 teachers, drawn from both the elementary and secondary schools, will attend these sessions. These teachers will be carefully selected, based on their interest in the program, plus their demonstrated teaching skills and creativity.

The objectives of the workshop will be:

- To acquaint the faculty involved with a detailed description of the purpose, nature and scope of the program.
- To explain what will be asked of each of the participants in terms of their time and productivity in order to meet the various program checkpoints.
- To present guidelines on how to get started and what general and specific directions should be taken.
- To develop and crystallize into an action plan, various ideas and suggestions offered by the teachers on how to continue with or modify existing independent study programs or start new programs. (The intent is to allow a free flow of ideas and give major priority to the teachers' suggestions.)
- To organize a plan on how to present the program to the participating students and what techniques should be used to orient the community.

(b) Selection of Students: Prior to the opening of school, students who will participate in the program will be selected. Approximately 1000 students will be drawn from the elementary and secondary grades. The students will be a representative sample of the school population in terms of achievement and aptitude. For the most part, in the lower grades, classes will be kept intact in order to minimize confusion and prevent complicating the program. In some instances, in the higher grades, participating students will be selected on the basis of subject area where special techniques will be tried. All students will be required to obtain their parents' consent before being finally assigned to the program.

(c) Orientation of the Community: A pamphlet describing the general scope of the program will be prepared for general circulation within the community. A public TV presentation will be made by the administration to discuss the program and its implications.

2. SCHOOL YEAR - FIRST QUARTER

The participating teachers will have their general plans crystallized and will begin student orientation when school begins.

(a) Resource Materials: Their major activity during the first quarter will be to begin preparation of resource materials to be used for the independent study program. The intention is to turn into practice as quickly as possible ideas on proper resource materials to allow students flexibility in their study and choice of materials to supplement their study. On-going programs will continue in the production of resource materials; new programs will begin to collect and produce the materials needed.

(b) Teacher Visits: Phased throughout the first quarter will be visits by the participating teachers to schools that have some history and record of success with independent study programs. Of particular importance will be the techniques employed by these schools, as well as their use of instructional materials. Approximately five schools will be visited during the three-month period.

(c) Personnel and Equipment: Intensive recruiting will be under way to find qualified people to fill out the support staff needed (media technicians, project coordinators, etc. - see discussion of plan under Objective 2.) In addition, purchase/rental equipment orders will be released for equipment.

(d) Evaluation Checkpoint: At the end of the first quarter, a two-day evaluation will be held between the administration and participating faculty. Purpose of the evaluation will be to assess results to date, make revisions in the program as needed, and finalize plans for the second quarter. Only essential revisions in the program will be made at this point. Scheduling changes, if any, will not be made until February, 1967. The specific areas the evaluation will probe for are:

- Developing attitudes and interests by teachers, students and the community.
- Production and implementation of pilot programs and resource materials.
- Current or anticipated problems, observed trends.
- Definition of techniques for measuring and evaluating the project.

3. SCHOOL YEAR - SECOND QUARTER

(a) Second Generation of Participating Teachers: During this quarter, 15-20 additional teachers from the elementary and secondary schools will be selected to become actively involved in the program. Orientation and initiation into the program will be essentially the same as given to the first group. New participants will have developed working plans and will begin preparation of resource materials. School visits will be scheduled during the quarter.

(b) Relief of Teachers by Support Personnel: Permanent substitute teachers will be employed to relieve participating teachers from part of their normal teaching responsibilities. In addition, program coordinators' and media specialists' positions are expected to be filled. Production of resource materials and their implementation into the program will be significantly increased as a result of the time available to the teachers and the activity of the support staff.

(c) Evaluation Checkpoint: The second quarter evaluation checkpoint will follow essentially the same procedure as the first quarter checkpoint. In addition, consideration will be given to the effectiveness of the support staff personnel and utilization of purchased/rented equipment which is in operation.

4. SCHOOL YEAR - THIRD QUARTER

During the third quarter, all activities described will continue. The 30-40 participating teachers will not be increased in order to avoid overburdening the program. Toward the end of the third quarter, planning will begin for the evaluation checkpoint, and consideration will be given to the major planning and evaluation effort that will be required for the fourth quarter.

5. SCHOOL YEAR - FOURTH QUARTER

During the fourth quarter it is projected that:

(a) All support staff positions will have been filled and personnel involved thoroughly assimilated.

(b) All proposed equipment installed and implemented in the program.

(c) A planned visitor program thoroughly developed and operating. (It is planned to use faculty and students in presenting orientation sessions for school visitors.)

(d) Consultants will have been selected and brought in to study the results of the first year of operation of the program. The consultants will include specialists in educational research and curriculum, sociology, anthropology and psychology.

(e) A major evaluation will be held at the end of the school year to review and appraise all aspects of the program.

6. RESULTS - FIRST YEAR OF THE PROJECT OPERATION

At the end of the first year of operation of the project, the following results are expected to have materialized:

(a) An established flexible schedule to suit the needs of the program; techniques and several operating programs developed for teachers and students in the elementary and secondary schools to effectively set up independent study programs to suit the students' needs. Non-curriculum independent study programs should be well established at the upper levels.

(b) Approximately 400 single concept films and other types of resource materials will have been developed.

(c) Seven to ten special-subject resource libraries will have been established. In addition, 3 - 5 learning laboratories established adjacent to cooperating classrooms in the elementary schools.

(d) All staff and equipment operating within the program.

(e) A major evaluation by outside consultants and a report of the program completed.

(f) Thirty to forty teachers trained and operating within the program.

(g) A fully operating visitor program.

(h) Various types of media presentations completed, describing the program for broad dissemination.

(i) A summer institute held in 1967 during which other schools interested in the Niskayuna project will be invited to participate in discussions on the results of the program to date. During the institute, planning for subsequent years of the project will be discussed.

7. SCHOOL YEARS - 1967-1969

It is difficult at this time to precisely define detailed plans for subsequent years of the project. A great deal of development, evaluation and observation is involved, which could result in new directions for the program or changes in areas of emphasis. However, based on our best judgments at this time, we would look for the following general results from the program:

(a) Second Year: All school faculty and students will be involved in the program. All learning resource centers will be firmly established. Resource materials will be significantly added to, due to the increased teacher participation in the program and the established operation of the support staff. The most promising techniques and programs for independent study will have been developed and documented.

(b) Third Year: During the third year it is expected that the independent study program will be organized, scheduled and functioning on a continuous basis throughout the school system within the curriculum structure. To a certain extent classes will be ungraded.

(c) Fourth Year: Major changes will be finalized for the entire organization, scheduling, achievement grading, class distributions and teacher/student involvement for the entire independent study program.

OBJECTIVE 2: Provide the personnel and physical resources needed to support a continuous study program.

PLAN: The plan to accomplish this objective can be examined in two parts: Personnel and Physical Resources. The following discusses each in detail.

I. PERSONNEL

Essential to the operation of the program is the organization and administration of a highly qualified team of support personnel. To give teachers the time to be creative in their teaching, the opportunity to try new techniques and develop resource materials, would not really be effective unless they were able to have the advice and help provided by skilled specialists. The following summarizes the overall organization of the support team and their working relationships.

(a) Administrative Staff:

Project Director: This person must be a capable administrator, enthusiastic about the program and skilled in working with people. His job will be to work closely with students and staff at all levels; work with cooperating external agencies; evaluate and make changes in the program as recommended by the faculty and staff and approved by him; set targets, both for the individual and for the whole program. In addition, he must keep constantly informed of current developments in the field of library science and independent study programs, as well as the technological developments that will further both.

(b) Instructional and Support Staff:

Instructional Systems Specialists: When one of the teachers is scheduled to develop a unit of a program or course, the project director will assign to the teacher an instructional systems specialist appropriate to the nature of the unit. This specialist will work closely with the teacher to assist in the establishment of appropriate and definable objectives and outcomes. He will then assist the teacher in the description of media and activities which will attain the objectives and outcomes. His duty then will be to interpret the descriptions to the media specialist or produce the media, and continue to work closely with the teacher throughout the development of the entire unit until it is completed and the teacher returns to the instructional program.

In-School Coordinators: This group is comprised of three faculty members, assigned to work part time with the various participating teachers and their programs in each of the schools (elementary, junior high and high school.) Through their close working relationships, they will help ensure that the needs or problems of the faculty working with the program in each of the schools are recognized and adequately attended to. They will provide advice, counsel and encouragement, and help sustain a practical cooperative working environment among the three schools.

(c) Aides and Secretaries:

A number of secretaries and full-time library aides have defined positions in the program to support the project director, instructional systems specialists and library staff. In addition, a full-time media specialist will be used to operate and maintain the media center. This person will be skilled in the operation of all forms of educational media and the preparation of instructional materials. He will provide technical assistance to the various program and in-house coordinators.

(d) Relief Staffing:

A final category of personnel is referred to as relief teachers or "permanent substitutes." They will be used to relieve existing teachers from part of their teaching responsibilities so they can devote more time to developing resource materials.

2. PHYSICAL RESOURCES

By physical resources, within this project, we refer specifically to materials, devices and facilities needed to directly support an independent study program. The school administration has long been aware of the usefulness of many types of audio-visual and electronic devices to aid learning. Our experience and observations of other schools, however, have strongly convinced us that the effectiveness of these tools is very limited, unless there is first established an environment in which they are viewed in their proper perspective and an adequate supply of quality media is available to use with the devices.

Accordingly, our major efforts during the past several years have been directed first at the philosophy of an independent study program and the kinds of teaching creativity needed to support the program. As a consequence, not having extensive types of educational media has neither restricted nor substantially held back the program. We are at a point in time now, however, when the proposed project will allow us to take a significant jump ahead in furthering our objectives of individualizing student learning with the independent study program. The physical resources needed to support the program must take a similar significant jump. As a result of our planning, we believe we have identified the precise areas where the physical resources needed will most clearly promote the project objectives.

(a) Library Concept: Basic to our planning of learning resource materials and educational media, is our concept of what a student library should be and what it should provide. We distinguish, first of all, a central library location; secondly, special subject or special use library centers.

The central library for each of the three schools would have little resemblance to the traditional school library, either in use or design. First of all, it would be available to the student for independent study at any time during the day he desires to use it. For the more advanced grades it would be open some nights, weekends and vacations. Secondly, contained in the library would be a broad array of multi-media devices and learning or browsing spaces. Typical of the type of plans we expect to implement are:

Carrells: Independent study booths providing some visual and auditory privacy for each learner.

Small seminar rooms: Rooms where small groups (4 - 10 students) may gather to discuss mutual problems or ideas.

Large seminar rooms: Rooms where groups working together in similar areas may gather by themselves or with a teacher to discuss problems or techniques of solving problems.

Tables: Surfaces where a variety of materials may be spread out without the limitation of the carrell.

Typing booths: A room or booths with acoustical control, where students may go to use typewriters at their convenience.

Browsing area: A comfortable area which is primarily suited to recreational reading, but also provides the psychological advantage of attracting students to the library.

Reference areas: An adequately stocked and furnished reference area to match the levels of work expected for each of the three schools.

Specialized rooms: To provide listening and viewing areas so that students can pursue their work without disturbing others.

Microfilm/microstorage area: Equipment available for the viewing and copying of material stored on some of the new microstorage media.

Periodical storage: In addition to microfilm storage, there would be an easily accessible storage area for back issues of commonly used periodicals and other current types of publications useful to the student for independent research.

Stacks: The backbone of the library would still be books. Adequate shelf space should be provided to store the many volumes necessary to provide the students with breadth and depth in the collection.

Service areas: There should be adequate space provided for the housing of staff and work areas to make the library a smooth-functioning unit with a minimum of interference to the students using it.

Curriculum center: A center that would be used by the instructional staff to prepare, with the assistance of the librarians, units of instruction and other materials needed for the independent study program.

The elementary and junior high libraries would be similar to the above with the exception of certain modifications in equipment and learning spaces to suit the various levels of students.

The special use libraries referred to would be located at strategic points in each of the schools. Their purpose would be to house learning materials related to specific subject areas. Their proximity to the majority of students who would use them, and their concentration in given subject areas, would make the materials more readily available to the students.

(b) Media Center: The media center previously referred to is closely allied to the library when used for independent study. This center will house a broad range of audio-visual materials and equipment which the students will have access to for their individual study needs. The media center would also have facilities for custom-designed production and creation of audio-visual materials.

The school administration is committed to the development of the kinds of library and media facilities described. The elementary and junior high facilities will require some enlarging and reorganization, whereas the high school library, when completed, will be essentially adequate. The proposed project will allow the purchase of those types of audio-visual equipment and materials which will complete the facilities needed.

Thus, it is believed that the new library concept extends the usefulness of the library into the total independent study program. As a result, students at all levels will:

- Have available resource materials essential to developing habits of self-direction and self-motivation in learning. James Olivero, formerly administrator at Lakeview High School, Decatur, makes this point forcibly when discussing multi-media aids (MMA). "Independent study," he says, "places emphasis on the utilization of available resource materials. Students are guided by teachers who know what resources are available and how the material can best be used to help meet student needs. When properly used, the MMA can help students discover new truths, synthesize generalizations, improve skills, and change attitudes. Tools so powerful should not be overlooked."

  In addition, by the student directly involving himself, it is believed a higher level of proficiency and personal satisfaction will result.

- Have the opportunity to develop techniques of research, organization, and evaluation of resource materials.

- Be able to individualize much of their learning to suit their own schedule, needs, interests and rate of progress.

- Become acquainted with the latest technology available to aid learning.

In summary, it is believed that availability (under this project) of staff personnel and physical resources as described will meet the objective of providing the support essential for the continuous independent study program.

OBJECTIVE 3: Investigate and evaluate the effectiveness of such a program in terms of the development of self-directed learning habits in students.

PLAN: The two important elements in this objective are "investigate" and "evaluate." By "investigate" is meant exploring, testing and developing appropriate approaches to help develop self-directed learning habits in students. "Evaluate" refers to measuring whether these approaches, in fact, contribute to the development of these kinds of learning habits. The following will focus on the methods, techniques and procedures of investigation to be used in order to accomplish this third major objective of the project.

Practically speaking, there are many unknowns about an independent study program. Researchers have pointed out the need for defining operationally what behaviors make up "independence" in independent study. Are these behaviors related to intellective or non-intellective factors or a combination of both? In addition, what types of curriculum lend themselves more to independent study; what are the degrees of involvement in independent study that should be expected of students; are there some students who would never profit from an independent study program; how much should independent and dependent study be mixed? These and many more questions can be asked. The answers become even more crucial when considering a K-12 continuous independent study program. This third major objective of the project, therefore, has major implications for the entire project.

Our approach must be flexible, building slowly on proven results and constantly probing for different techniques to test reasonable but undeveloped results. To illustrate the kinds of approaches to be taken in this project, six different techniques are outlined below. Some are ongoing pilot programs; others are only in their planning stages.

I. SOCIAL STUDIES

Beginning in September, 1966, one 11th grade American History section will organize its classes and students in the following way. A class of 120 students (which normally would meet four to five times per week as a class of 30) will meet once per week as a full class. Thereafter, the class is broken into groups of 15 each; each of the small groups will then meet twice per week with the teacher. The full class session is used for material that is best presented at one time to all the students -- for example, a motion picture, visiting speaker, examinations, etc. In the small groups, the teacher will have the opportunity for creative group discussions and more individualized attention for each student. The additional one to two classes per week the students would be in class under the standard schedule will be time available to the students for independent study.

A range of independent study approaches will be used. In some instances, the students will be working on teacher-directed studies; the emphasis, however, will be on student-initiated and directed studies. The teacher will, therefore, be concentrating a large part of his time on the preparation and collection of resource materials needed by the students. It is expected that interest in this approach will spread in a short time to other American History teachers.

2. EARTH SCIENCE

The three ninth grade Earth Science teachers will begin (in September, 1966) a cooperative approach to arranging student laboratory periods. Previously, each teacher has had four sections of approximately 25 students per class; each class met five times per week. Under the new plan, each teacher will meet his class of 25 students only three times per week. Thus, each teacher will have twelve formal periods per week as contrasted with twenty previously. The extra time available to the students will be spent in independent study and in doing the required lab work.

The lab scheduling will be handled in an entirely different way. Instead of only certain times during the week when the lab is open during classtime, it will now be available to the students at any time during the day. With this "open lab" concept, the student has the flexibility and freedom to schedule when he will perform his course experiments, or other experiments in which he has a special interest. The teachers will alternate in handling the labs. Eventually, it is expected a laboratory aide would be used to relieve one of the teachers.

Thus, the students are given more time for independent study, the opportunity to be responsible for their own lab scheduling, and more freedom to explore areas of interest within the "open lab" at their own leisure.

The teachers have the opportunity to keep their classes small, to employ a cooperative scheduling of their time within the lab, more time for individual student attention, and more time for the preparation of resource materials.

It is expected that, eventually, the teachers will switch, to some extent, in sharing each others' classes. This will provide more variety for the students and help ensure a more uniform subject content within the course. Independent study will receive major emphasis, not only for lab work, but also for study within and outside the required subject content. Providing learning guideposts and useful resource materials for the student, but allowing him to proceed at his own rate, and to a great extent under his own direction -- will be the major focal point of this pilot study.

3. CHEMISTRY

Two eleventh grade Chemistry teachers are currently combining their teaching and lab efforts. Each teacher has two sections; each section meets three times per week with the full-size class of approximately 60 students. During lab periods, one teacher will take 30 students and the other teacher will hold a group discussion with the other 30 students. During the group discussions, the students will have the opportunity to air their problems, review the class material, or discuss areas of common interest.

This team teaching approach will, in the near future, include "open lab" scheduling as mentioned above under "Earth Science." In addition, the group discussion classes will be reduced in size to 15 students for half the normal period. While the first 15 students are in the group discussions, the second group of 15 students will be free for independent study.

The purpose of this pilot program, therefore, is to provide time for more individualized instruction and independent study. With the "open lab" concept, the student takes on more responsibility for directing his own learning.

As previously discussed, having resource materials available for the student is a key element in the program. Typical of the type of resource material visualized would be lab instructions. For example, when the student arrives for his lab sessions he would, first of all, go to a table-top rear screen projector. There he would review a short film or slides on the experiment to be done, hazards to watch out for, and other pertinent information. Selection of other short "single concept" films would also be available to provide further laboratory instructions or review for the student. (For example, techniques of bending glass tubing with a Bunsen burner or heating solutions in a test tube.)

In this way, the student has the flexibility of being able to select learning materials (under his own direction and in the depth he requires) and use these learning materials in a way that best matches his own rate of learning.

4. WORLD GEOGRAPHY AND HISTORY

One of the main purposes of the tenth grade World Geography and History course at Niskayuna is to teach an appreciation of different world cultures. Beginning in September, 1966 (after more than a year of planning) a unique and entirely different approach will be tried by one, or perhaps several teachers. The course will be set up as follows: the teacher will meet his students in groups of twenty to twenty-five; each group will meet four times per week, for a total of twenty class sessions of teacher time per week. Early in the course, the teacher will present a logical framework for approaching the study of any culture area. The four key factors underlying the logical framework will focus on geographic, economic, political and specific cultural considerations. Using these key factors, the student is guided through all the major interrelating elements that define a culture area. Once learned, the student has a way of mentally organizing his study, and can more quickly locate the important descriptors of a given culture area. Independent study then becomes the major technique employed within the course.

Some students may be studying European cultures simultaneously with another group studying Far Eastern cultures. Within each group some students may be studying the economic or geographic approach, while others are concentrating on the political factors. Each student ultimately covers all the required cultures outlined in the course, but he has done so at his own rate, at his own depth, and as a result of much self-planning on his own part. In addition, potentially rich group discussions are possible as a result of the variety of experiences the students have to discuss. The teacher provides the major learning guideposts, but the instruction becomes highly individualized and self-directed.

The success of this pilot program depends greatly on the availability of resource materials (maps, reference texts, etc.) So unique is this approach, however, that there are no standard resources organized in the way needed. Thus, the teacher, with the help of the project support team, will have to develop and organize much of the learning resources needed. As the resources are developed, the plan is to have them available in a small resource library adjacent to the classroom.

5. JUNIOR HIGH - TEAM TEACHING

In 1964, an interdisciplinary team teaching program began at the Van Antwerp Junior High School. A team includes four teachers: English, Social Studies, Math and Science; each team handles 120-130 students per week in five classes. Through regular weekly meetings of the various teams, each teacher develops awareness of the total team program. The teachers are also better able to understand their students through team discussions. As a result, there is more efficient organization of both the student's and the teacher's time and much improved intersubject correlation. Another aspect of the program is a vertical departmental organization for curriculum development.

One of the successful elements of the program has been some flexible scheduling to allow "draw" periods. Draw periods are scheduled times during which the students are free for study in a large group pool or available to be drawn from the pool to work with a teacher. The teachers are free for small group or individualized instruction. The program has demonstrated that the draw periods open up many opportunities for small group and independent study, either for remedial work or knowledge enrichment.

As an important adjunct to the team teaching program, careful attention was devoted to learning resource materials to foster independent study. The concept employed was to use the classroom as the resource center, so that the resource materials needed by the students were immediately available. Another consideration in this decision was the relatively small space available in the library. As a result, we propose eight decentralized supplemental learning stations to cover the English, Social Studies, Math, Science, Physical

Education, Music, Language and Arts areas. By carefully scheduling regular classes, it should be possible to approach freeing one class in each subject area for independent study that previously has been restricted.

6. ELEMENTARY GRADES - INDEPENDENT STUDY

In 1965, the library at Craig School was redesigned with simple modifications to include a listening area, viewing area, and individual study carrells. The library is small, and this redesigning as a media center constituted the inception of a limited program.

The library schedule for grades K-5 was reorganized to open large blocks of time, thus encouraging a greater flow of students at all times of the day (non-scheduled) for independent or directed self-instructional study.

A few illustrations of this limited program are:

(a) Librarian orienting children in the use of the equipment and the materials available.

(b) Children using listening center for motivation, interest and knowledge. (Drama, poetry and historical readings.)

(c) Children using filmstrip viewers and the 8 mm single concept projector for study in Science and Social Studies at viewing carrells.

(d) Children using software, books, reference materials, etc., at individual study carrells.

Our greatest difficulty at this time is making use of a limited facility for a multi-media pattern in encouraging self-directed learning and independent study.

Existing Facilities:

The existing library has had minor alterations performed to develop an environment for independent study.

Individual carrells were provided for viewing filmstrips, 8 mm single concept films and individual study.

The listening station developed provides for eight students with headphones. The story-telling area, when not in use by the librarian, can be used for a small group viewing station, with either the 8 mm single concept projector or the EDL controlled reader. Each classroom has a natural study area and no alterations to the classrooms will be necessary at this time. However, as the program progresses and material and equipment prove their value, the classroom will undergo change with carrells and equipment becoming a permanent part.

The library, aside from the limited modifications, due to the size of facility, contains the usual book stacks, browsing tables, card catalogues and reference area.

Any further expansion of the existing library to facilitate the development of a media center is extremely unlikely.

The foregoing examples illustrate the types of programs and planning that have been developed at Niskayuna to further the development of self-directed learning habits in students. They also illustrate the techniques and procedures that will be used to accomplish this third major objective of the proposed project.

In summary, the major techniques to be employed are: flexible scheduling, variable group size, individualized student attention, making time and resource materials available to each student for independent study, placing a large part of the learning responsibility in the hands of the student.

CHAPTER V
THE NEW ORDER COMETH

PART I

Updating Thinking

How many worlds do you live in? The answer is: more than one, many more than you can possibly imagine. You live in the world as you perceive it, and this is your world. You also live in the world as perceived by others, and this is a different world from yours. These worlds are part of an infinitude of worlds that stretch out to become part of a solar system, a constellation, a galaxy, a universe.

To be conscious of multiple worlds causes us to become defensive and look in upon ourselves in fear, or it affords us a grander perception of "purpose" and leads us toward new life. Multiple worlds are a matter of perspective, and of time, and space, and dimension.

The Sun, our closest star, is 860,000 miles in diameter. The Earth shows small, very small, beside it. Out in the constellation of Scorpius is Antares, whose diameter is 390 times that of the Sun! Our solar system, out to the orbit of Mars, some 141 million miles from the Sun, would fit inside Antares! And beyond Antares?

The mind must stretch to accommodate new knowledge as to what we are and where we are, and this makes a difference to each of us living in our own and others' worlds. It also makes a difference that each new bit of knowledge alters our world and our regard for all worlds, forever.

Worlds change. Individuals change. Needs and purposes for education change.

Formerly, it has been stated that the primary purpose of education is to "transmit the culture." This outdated concept has been destroyed by questions. What culture? - White, middle class American? Transmitted to whom? - Ghetto children, middle class children, upper class children? For what purpose? - Maintain the status quo, defense against the insidious "altering power" of problems?

Generations of educators have been seduced away from the true primary purpose of education by pretty words. The primary purpose of education has always been, and continues to be, the education of individuals for survival in a constantly challenging environment.

Primitive children learned how to find shelter and food or they perished. And, because "man does not live by bread alone," they learned how to draw, carve, sing, dance, and develop social skills.

The modern education process needs to attend those problems threatening present-day survival, and to provide individuals opportunities for learning survival skills for today's world.

This means that education today must perform tasks much greater in scope and responsibility than that of "transmitting the culture." By the same token, education, in order to fulfill its responsibilities, must become a more active and more effective agent of change.

Educators have responsibility for using their superior learning opportunities to develop knowledges and skills that can be used to help guide social evolution. Where educators fail to accept this responsibility, schools are faced with student rebellion, and communities must endure turmoil. Where those responsible for education of citizens fail to help guide social evolution, they will suffer, along with all citizens, as society drifts directionless and lost, to be replaced by another society more capable of helping its citizens find the way toward survival in the struggle to overcome the vicissitudes of life.

Where educators accept the responsibilities and fulfill the tasks of helping individuals mold character, form attitudes, establish new goals for existence, and, hence, change society, schools become productive, congenial places where creative life processes show themselves and are reflected in wholesome student behavior. Communities reap great rewards from this circumstance. It is a perfect expression of mankind's best use of spirit and intellect to achieve another step toward maturity, toward fuller realization of an ever-growing potential.

Schools are a reflection of the community they serve, and the community is a reflection of its schools. The mutuality of this causal effect is evident, and clearly places considerable responsibility on educators to help change schools so that they may help change communities - that can, in turn, help improve the school program. There must be a beginning some place, and education is foremost among basic social institutions with competence and opportunity for making the essential beginning. This is a fact that educators need to comprehend, and it represents a challenge that they must accept.

If school people accept the goals of "education for survival," there are many things happening in the world today that go far beyond the scope of traditional education concerns, and demand attention.

Mental Illness

Although there has been a nine per cent drop in patient load in mental hospitals throughout the country, there has been a 35 per cent increase in institutionalization of the 15-24 year old age group. This is considerably greater than the relative increase of this age group in the general population. The number of boys 10-14 years old in mental hospitals increased sixfold in the last decade as compared to a twofold increase in the general population.

Increasing knowledge about mental illness is helping attack the problem after it has been identified. A major school responsibility is to assist in the early detection of those students who may be suffering from mental illness, or who may be on the verge of it.

As concern about mental illness increases, more attention is being given to the body of knowledge that is growing about its diagnosis, treatment and cure. Much is being done.

Dr. Leonard Schatman, a medical sociologist at the University of California Medical Center, reports steps toward community psychiatry. He points out that there are a multitude of services gradually being extended to everyone, not just those capable of financing the heavy costs of traditional analysis. He says there is "something for everyone" - in-patient, out-patient care, day care, night hospital care, family care, drop-ins, relatives groups, small groups, large groups, adolescent and young adult and married groups, occupational therapy, recreational therapy, analysis, counseling, drugs, rehabilitation, vocational guidance, home visits, post-hospital groups, emergency telephoning, weekend therapy groups, and do-it-yourself therapy kits.

New procedures for treatment of mental problems are being devised. Dr. Joseph Wollpe, Chief of Psychiatry at the Temple University Medical School in Philadelphia, Pennsylvania, has devised a "behavior therapy strategy" that involves the use of various kinds of physical manipulations and stimuli to help an individual "relax" and be better able to face squarely the problem that is troubling him.

Drugs are achieving considerable importance in the treatment of mental illness. Phenothiazines are credited with remarkable results with schizophrenics. Various tranquilizers have been in use for years to help ease mental tensions for certain types of patients.

Mind Control

Two California scientists - Dr. Roger W. Sperry Hixon, Professor of Psychobiology at the California Institute of Technology at Pasadena, and Dr. Michael S. Gazzaniga, Assistant Professor of Psychology at the University of California at Santa Barbara - have led research that has demonstrated the relative independent from one another of the two hemispheres of the brain. Heretofore, medical people have regarded the two hemispheres as halves of a single global brain. Doctor Hixon discovered that they really serve as separate but connected brains. The two hemispheres are connected by a nervous tissue bridge and appear to operate as a single organ. Actually, the two brains are Siamese twins and can be divided by surgery, apparently without damage. Some ten operations of this nature have been successfully completed on human patients.

As knowledge increases concerning the physical structure and characteristics of the brain, other knowledge increases concerning the use of mind-altering chemical compounds. Memory has been transferred from one animal to another, by injection. A chemical from the brains of hamsters trained to do a particular thing has been injected into rats. The rats quickly showed some ability to do the same thing as the hamsters, but without training. Successful development of this line of experimentation might even lead to pills to spur faltering memory, or possibly to wipe out harmful memories.

Other experimentation with certain kinds of drugs has demonstrated that the ability of animals to perform a certain task can be strengthened. Powerful drugs have been found that can raise the intellectual level of hereditarily stupid animals.

Testifying before a Senate subcommittee recently, Dr. David Krech, Professor of Psychology at the University of California in Berkeley, said that in five to ten years combinations of drugs and psychological measures will permit the exercise of a significant degree of control over the development of man's intellectual capacities.

Mechanics of Prolonging Life

Dr. John H. Law and his associates at Harvard University have created a hormone that prevents aging in insects. It may have eventual implications for humans.

Two New Yorkers, reporting to the American Cancer Society in 1966, reported that they have been successful in destroying tumors in mice with fluids extracted from cancerous tissues of other mice, chickens, cows and humans. Lawrence Burton and Frank Friedman, of St. Vincent's Hospital's Hodgkin's Disease Research Laboratory, are enthusiastic over what seem to be vital clues to the understanding of cancer. Refining a substance from cancerous cow tissue, they injected the fluid under the skin of mice, away from the tumor site. Complete tumor destruction was reported in every one of the more than 200 mice treated, including animals with more than one tumor. No tumor could resist the cancer-dissolving effects of the fluid.

The experiment had serious limitations, but further efforts are hopeful of good results. The Burton-Friedman substance was used recently by medical colleagues for two human patients near death from incurable cancer. Both patients died shortly after injection, but were completely free of tumorous tissue. Neither died of cancer.

Burns are a frightful cause of human death. Death comes from loss of body fluid and infection following the destruction of skin by fire. An artificial skin for treatment of severe burns is being used now on some patients. The artificial skin, known as velour, is a direct consequence of application as a coating for artificial hearts. Velour is actually a cloth used for dresses, shirts and carpeting. It is used to cover the artificial heart when it is inserted into a patient. The looped threads of the cloth entrap fibrinous material which gradually builds a surface familiar and compatible with surrounding tissue. In its use on severe burn victims, the same concept applies. The velour, sterilized and treated with antibiotics, is placed face down over a burn. The loops provide an area through which new skin can grow.

Heart transplants, liver and kidney transplants are becoming commonplace. Theodore Gordon, of Douglas Space Systems Center, speaking before a conference at Stanford University, said that biologists predict that there will be millions of artificial hearts, livers and other organs available in the near future that will make an average life span of 100 years perfectly possible by the year 2000.

William S. Beck, writing many years ago, said, "Free of the diseases of childhood, he (man) now lives to die of something else. Freed of today's diseases of old age, man might live as long as the giant Sequoias."[1]

More People, More People

In "Education Now for Tomorrow's World,"[2] a committee of the California Association of Secondary School Administrators reports these things:

1. World population in the year 2000 will rise to somewhere between five and six billion, from 65 per cent to double what it was in 1963.
2. The crucial question regarding overpopulation as seen by Dennis Gabor is at what density the equilibrium will be reached: at the starvation level or at something worthy of the dignity of man? In some backward regions, the starvation level may be reached, but this extreme probably will not be allowed to occur in advanced nations.
3. Population growth must be slowed down. However, in most nations only persuasion can be used. By 1980, food production in the world must rise by 50 per cent.

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[1] Beck, William S., Modern Science and The Nature of Life. Harcourt, Brace & Company, New York, 1957. P. 282.

[2] Education Now for Tomorrow's World, a monograph published by the California Association of Secondary School Administrators, 1968.

4. As far as population growth in the United States is concerned, it is predicted that it will nearly double by 2000 AD, increasing from 180 million to 331 million. (Probably a low estimate.) The population will continue to shift to the west and southwest, and California will remain the largest state. Five-sixths of the population will be urban dwellers, and will occupy two per cent of the land. Half of the population will be concentrated in twelve states which contain ten per cent of the land area. Nearly one-half of all Americans will live within one hundred miles of an ocean. This will necessitate the use of sand bars, offshore islands, and the building of sand pits.

5. There will be a radical reconstruction of cities, already partly under way in the United States. As part of such reconstruction, there will be developed a public building program going far beyond anything thus far blueprinted by the most imaginative planners of today.

6. The continuing trend toward urbanization presents problems of tremendous magnitude: urban blight, desecration of the countryside, waste of time and life in traffic, pollution of air and water, failures of public services to keep up with growing demand, and increase in numbers of people who are victims of aggravated assault. Unless drastic measures are taken to reverse the present trend, by the year 2000 AD we could have black cities and white suburbs.

7. In the western states, twenty-five per cent more water will be needed than is presently available. In the east and middle west, the problem will be the

quality of the water. The pollution problem in densely populated states could be overwhelming. With present sewage disposal methods, half the river flow in the United States will be needed by the year 2000 AD to dilute the filth of the cities.

8. Cities will expand until entire countrysides are more or less fully urbanized. Residential slums, as well as unsightly factory districts, will be entirely eliminated. While private passenger car operation will increase very much abroad, notably in Soviet Russia, but also in Africa and Asia when more roads are opened, it will decline from the present high level in the United States. In the United States there will be greater dependence than at present on mass transportation facilities, particularly on high-speed buses and trains; there will also be much renting of cars.

Speaking before the 50th Anniversary Conference of the American Institute of Planners in Portland, Oregon, in 1966, William L. C. Wheaton, Director of the Institute of Urban and Regional Development at the University of California at Berkeley, said that fifty years from now there will be 500 million people living in the United States in 1,000 metropolitan areas, with family incomes averaging $25,000 a year. He predicted single buildings, 100 or more stories high, with as many as 500,000 people living and working together.

Dr. Wheaton prophesied at least four American megalopolises - huge concentrations of people with populations of 50 million people in each - with one stretching from San Francisco to Los Angeles. (From current trends, it would appear that the California megalopolis will stretch from San Francisco to San Diego!)

The "population explosion" has focused attention on serious social issues. Scholars gathered recently in conference at the University of California Medical Center to discuss "Time for Decisions - the Biology Crossroads," came to the conclusion that the price for survival in the population crisis was the toppling of cherished traditions of church, commerce, and state. Traditional "love of country," they proposed, must be transformed to "love of world," lest fatherlands wither from overcrowding or resulting wars for "living room." Speakers said that later marriages with premarital sexual freedom under the protection of contraceptives appears to be a lesser evil than early marriages that produce children.

"The pill" is giving birth to a social revolution. A dramatic part of contemporary consideration of the problems of population control, the pill seems to have overcome moral reservations concerning its use, and is in process of overcoming medical reservations.

More than seven million American women swallow a pill a day. So popular are the brands approved by the Food and Drug Administration that pharmaceutical companies are already looking ahead to second-generation pills - "morning after" pills and once-a-month pills.

That use of the pill will have an increasing and dramatic effect on human mores is a foregone conclusion. The physical effect of the pill on women - oral contraceptives are potent chemical hormones - is still a matter of conjecture.

People in Ghettos

Growth of the megalopolis has exaggerated a problem that has always existed wherever human beings have grouped together to facilitate social, economic and political organization. In any grouping that puts people together for living purposes, the differences between individuals become highly visible. These differences, sometimes made larger than life by proximity, can and do become major sources of grave personal and social conflict.

Problems arising from group living are particularly acute today because the dramatic differences existing between privileged persons and disadvantaged persons are more clearly observed than was possible before the advent of highly sophisticated communications media such as television.

Urban areas today are sick with the dissension of unreconciled differences between individuals and groups of individuals. The sickness must be attended or contemporary society will disintegrate into another "dark ages," a time more horrible than any from the past because of the greater numbers of humans involved and the height of the eminence from which humanity can topple.

The sickness cannot be ignored, contained or escaped. It is as vital to the concerns of the privileged as to the disadvantaged for practical as well as humanitarian reasons. The privileged can move away from trouble spots in the urban area and never be touched by the blight of poverty, the cruelty of despair, the curse of social deprivation. Those chained by circumstance to the harsh core of the cities can look from their trap and still see privilege. This is the stuff of which revolutions are made. One of the most serious threats to survival in this enlightened age is the sickness of the cities.

City sickness has many symptoms - declining tax base for support of increasing needs for police and fire protection, other services and welfare; congestion; physical deterioration - but the single most serious symptom concerns the complex of problems related to growth of the black community.

Between 1940 and 1960, the total population of metropolitan areas increased by 40 million persons. Eighty-four per cent of the Negro increase occurred in the central cities, and 80 per cent of the white increase in the suburbs.

Between 1950 and 1960, the 24 central cities lost nearly one and a half million white residents, and gained more than two million black residents. Not only are blacks now concentrated in central cities, they are rigidly segregated within them.[3]

A critical dimension of the concentration of black citizens in urban areas is illustrated by the following statistics. Between 1949 and 1964, the median annual income for non-white families increased from $1,650 to $3,800. Median annual income for white families rose during the same period from $3,200 to more than $6,800. The disparity between white and non-white annual income in 1949 had been less than $1,600. By 1964, the gap was more than $3,000.[4]

Central cities have more poverty - families with incomes below $3,000 a year - than suburbs. Suburbs have more wealth - families with incomes of more than $10,000 a year - than cities. Those more capable of paying costs for cities

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3. Racial Isolation in the Public Schools, a report of the United States Commission on Civil Rights, 1967. P. 12.

4. Ibid, P. 15.

have "moved out." Those least capable of paying costs have "moved in." Poverty, a high concentration of poverty, creates problems with which cities are losing the capability to cope.

Even more acute than the staggering physical and fiscal problems of urban areas are human problems, problems relating to human degradation, waste and conflict. Children growing up in segregated urban areas with a poverty core have the heartbreaking disadvantage of poor self-image. They feel they cannot - ever - achieve as well as those more privileged. They have learned that they do have limitations, and they can see no way in the present whereby they can overcome these limitations.

When a person can't live wherever he wants to, even if he can pay for it, he lives in a "fenced-out" world where the spirit is even more offended by the circumstance than is the physical being. Out of this offense is bred hate, and with hate comes conflict.

Conflict in central cities now takes on the aspect of civil war. This is a natural evolution of problem situations that have not been resolved by due process of law. When the "law of the land" either does not attend serious social problems, or is ineffective in their resolution, it is bypassed by revolution. This is the course of history.

A November, 1967, report of the U. S. Commission on Civil Rights titled, "A Time to Listen ... A Time to Act," states in the conclusion:

"The response of Government to deprivation and discrimination has raised expectations, but has too often been characterized by an inadequate commitment of resources and by acquiescence in, or failure to deal effectively with, practices of segregation and confinement. In addition, the goals of social and economic legislation often have been thwarted by self-defeating rules and regulations. Thus, for example, most Negro citizens would welcome welfare programs which offered not a 'dole' but assistance which would achieve the program's stated purpose - to promote economic independence and family stability. Instead, welfare programs have been devised and administered in a manner which tends to break up families and perpetuate dependency. Critical decisions are often made by officials far removed from the scene and the persons most intimately involved are generally not permitted to participate in planning their own affairs and futures.

"Underlying these private and public actions have been attitudes within the white majority - attitudes based on fear, on racial prejudice, and on a desire for status. While many of these attitudes are not overtly expressed, they are nonetheless real and effective. They have been accompanied by a lack of concern for, and a failure to become involved in, the problems of the slums.

"It is in the context of great frustrations, of laws and programs which promise but do not deliver, of continued deprivation, discrimination and prejudice in a society increasingly prosperous, that the increasing alienation and the disorders of recent months must be viewed. Despite the great destructiveness of recent urban riots, mainly to people and property in the ghetto itself, relatively few people have been involved. But the general public should come to understand that the riots are only the manifestations of feelings of anger and despair which are much more widely shared. Reacting to continued rejection and to doors which do not open even after years of patient waiting, increasing numbers of Negro citizens are rejecting white America. The failure of state, local and federal governments to respond to the efforts of moderate Negro leaders is causing increasing numbers of Negroes to despair of moderate methods and of moderate leadership and to favor a separatist course.

"The expressions of these feelings, often lumped together under the heading of 'black power,' are varied. Some expressions, particularly those which help to build a sense of dignity and pride and which stimulate community participation, may be constructive; others, such as riots or violence, can only be destructive of what little has been achieved so far. But even the most constructive efforts by Negroes are not likely to reduce materially the deeply held feelings of frustration and anger, or to improve the sad state of race relations in this country, until Americans generally make a massive commitment to strike at the underlying causes - poverty and segregation."

Color Line

The problem of the black ghetto is a white man's problem because he made it. He has segregated the black man into enclaves surrounded by the affluence, the prejudice and the arrogance of white society. The white man has tried to contain the black enclave in spite of tremendous pressures building within it that are beginning to escape in history-molding explosions.

The white man can only solve his ghetto problem by gaining some understanding of the nature of the problem. The problem is multifaceted, but its major component has to do with color and racial prejudice.

One of the things the white man needs to understand is the depth of bitterness felt by the black man. Malcolm X was one of the more articulate spokesmen for black citizens. In the introduction to his autobiography[5] there is this statement:

"He [Malcolm X] attributed the degradation of the Negro people to the white man. He denounced integration as a fraud. He contended that, if the leaders of the established civil rights organizations persisted, the social struggle would end in bloodshed because he was certain the white man would never concede full integration. He argued the Muslim case for separation as the only solution in which the Negro could achieve his own identity, develop his own culture, and lay the foundations for a self-respecting productive community."

Mayor John H. Reading, of Oakland, California, illuminates the attitude being expressed by black extremists. The San Francisco Chronicle for July 28, 1968, reports the Mayor as saying:

"It's a totally different ball game from the one I began three years ago when I was elected Mayor. Then the emphasis was on civil rights, equality, more jobs, better housing and education.

"But now a militant, articulate, extremist Negro minority has seized leadership of the black community from more moderate leaders, and they claim to speak for the entire Negro community, including NAACP, CORE, SNCC and the various poverty program agencies.

"I was dedicated to help them in the fight for civil rights, equality, jobs, housing and education.

"Those are not their targets now. They want absolute political and economical control of

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[5] The Autobiography of Malcolm X, Grove Press, Inc., New York, 1964. P. xi.

the entire city. That is what their drive is aimed at. That is their destiny for Oakland."

Drew Pearson, in his column of July 31, 1968, reports about black extremists' plans for Washington, D. C.:

"What the FBI has found in Washington is that the black militants have worked out a secret plan to take over the nation's capitol. The militants argue that Negroes are now in the majority, and that given home rule they can take over the city. ... They have worked out the following secret strategies to take over the capitol.

"First, they will try to persuade the moderates to become militant, and if they fail, then bury them with frustration and harassment. When the moderates hold meetings, the strategy is to break up the meetings or be so unreasonable that the moderates will have to disassociate themselves from the meetings."

Feelings run deep in the black community, and the voice of moderation is weakened by the slowness with which white society is moving to redress age-old wrongs.

The University of Michigan's Survey Research Center made a study in 1968 for the National Advisory Commission on Civil Disorders. Results of the survey seem to indicate that the majority of black citizens are not as militant as the radical minority would wish, and that, if white America will "do something," full-scale civil war may be averted. The survey, made among Negroes, reported on a wide variety of questions, finding among other things that:

* 48% said they would prefer to live in a neighborhood half-black and half-white.

- Only 8% said they would prefer an all-Negro neighborhood.

- 22% of Negroes between ages of 16 and 19 believe that a school with mostly Negro children should have mostly Negro teachers. Only 6% in the 40-to-49 age group agreed.

- 19% of the younger Negroes believe that whites should be discouraged from taking part in civil rights organizations, while only 6% in the older age group agreed.

- 14% said they "approve" of Stokeley Carmichael, while 72% said they approve of the late Martin Luther King, Jr. 50% approve of Roy Wilkins, Executive Director of NAACP, while 14% approve of the militant H. Rap Brown.

- In summary, the report stated, "As in the case of religious and ethnic groups in America, there seems to be wide support for cultural individuality within a larger interracial social structure.

  "Such affirmation of black identity is in keeping with American pluralism and should not be termed 'separatism.' It does, however, contain a source from which leaders advocating separatism can draw, especially if there is wide disillusionment with the possibility of making integration work in social and political contexts."

And Much, Much More

The world today is one where differences in political ideology are being replaced by differences in wealth and productivity as bases for conflict between states. Critical political problems of the immediate future will not arise from ideological debate, but from differences between the "have" and "have not" nations of the world.

The two major opposing political philosophies - American Democracy and Russian Communism - have arrived at a point of stalemate. Either can bring destruction upon civilization should a major war be started, and neither wants that. This means that, for the foreseeable future, there will be reasonably peaceful coexistence between the United States of America and the Union of Soviet Socialist Republics. And this means attempts to find peaceful solutions to all sorts of problems, accommodation to one another's presence throughout the world, application of lively competition in intellectual as well as other activities, and a gradual rapprochement between the two countries in the best interests of humanity.

A Russian scientist has recently suggested a wide-ranging program of cooperation between the United States and the Soviet Union to attack the major dangers threatening mankind. He considers these dangers to be the threat of thermonuclear war, overpopulation, famine, chemical pollution of man's environment, police states, and encroachment on intellectual freedom. Andrei D. Sakharov, a member of Russia's Academy of Sciences, suggests a program that would enable both of the superpowers to achieve significant political, economic and social transformations and enable them to deal jointly with the problems of the underdeveloped part of the world.

The revolt of youth against certain of the "phony" aspects of contemporary society is no subject for idle contemplation. Youth is serious in criticism of irresponsible elders, of goals in a materialistic society that delimit rather than expand intellectual and spiritual experiences, of only lip service to the tenets of "brotherly love," of cynical acceptance of the condition of oppressed minorities and deprived nations. They are critical of arbitrary laws and regulations. They believe that when taught about freedom and democracy, they should have some experience in being "free" and "democratic." Healthy, intellectually superior, they decry the mistakes of their elders and are in a better position than prior generations of young protesters to "do something about it" because they have great political and economic power that they are beginning to learn how to use.

A new moral sense is being evolved in the youth society that cuts away the superficial and emphasizes new fundamentals made necessary by increasing knowledge and population. It speaks of basic human integrity rather than the application of a moral code heavy with concerns about superficial sex and outmoded patterns of human behavior.

The new morality will have an increasingly significant effect on politics. There are already moves on foot within legislative bodies to "professionalize" the job of the politician, to establish guidelines for ethical conduct that will dispel the cynicism that has traditionally surrounded political activity, political motives and operations.

A prime emphasis in the development of a new morality concerns the integral "I."

"Who am I?" "What am I?" "Where am I going?" "What am I going to be?" "What am I becoming?" "Who are all those others?" These are real questions for young people in a more direct and meaningful context than they have ever been for young people in prior generations. The questions have more meaning today because the world is new more often than it used to be, and the phenomenonological self is subject to more stimuli and formative forces than ever before in the history of mankind.

Self-concept is critical to the formation of a life style, and every human being is guided by his life style. His life style determines how he will fulfill his responsibilities in work, sexual role, social relationships, spiritual and intellectual development.

How individuals view themselves has always had great significance in the social setting because of personal interaction. How an individual behaves is a reflection of what he considers himself to be. In a democratic setting this all has critical meaning.

Dinkmeyer and Dreikurs[6] provide language for extending this thought:

"The democratic evolution is characterized by a process of equalization. A member of a democratic society tends to resist pressure from those who try to assert authority over him.

"In other words, pressure from without rarely promotes desirable behavior. One can seldom 'make' a child behave, study, apply himself, if he chooses not to do so. Pressure from without has to be replaced by stimulation from within. Reward and punishment do not produce this inner stimulation, or, if they do, it is short-lived and requires continuous repetition. This is different from inner stimulation. Once a child moves voluntarily in the right direc-

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6. Dinkmeyer, Don and Dreikurs, Rudolf, *Encouraging Children to Learn*. Prentice-Hall, Inc., Englewood Cliffs, New Jersey. 1963. P. 2.

tion as a result of intrinsic motives, the chances are that he will continue to do so without any outside influence ...

"With the weakening of autocratic control at all levels of social functioning in the nation, the community, the school, and the family, every individual gains the right to determine his own direction. This self-direction is fundamental in a democracy. Our children share this right of self-determination and make considerable use of it, frequently to the bewilderment and embarrassment of parents and teachers who discover that they can no longer impose their wills. What the child decides to do depends largely on his own concepts, his perception of himself and others, and his methods of finding a place for himself ..."

And still there's more to which the new education must attend if it is to help individuals survive in this "Space Odyssey" age.

Loneliness in the midst of large social groupings. How to find and benefit from privacy in a society that forces individuals into constant and oftentimes frustrating social interaction. Poison in the air. Pollution in lake and stream. Cybernetics. Man-machine interaction. A viable World Government. Space exploration and the philosophical implications inherent in accepting the concept of an expanding universe. God in the mind of Man.

All of these things, and more, affect human survival and should hold great significance for the building of a relevant public school curriculum.

- * Schools must do a better job than they have done in the past in identifying active or incipient mental illness in individuals.

* Schools need to expand health and consultation services which may lead to the prescription of drugs and diet for students; for mental processes can be improved by diet, medication and other means.

* Physical fitness can help individuals benefit from and enjoy longer life, and school programs need to reject traditional physical education and develop programs for helping individuals achieve physical fitness.

* Increasing population demands new school organization, planning, program and extension of services.

* Schools in ghettos need to have superior staffs, increased support services (school-community coordination, medical services including psychological services, vocational counseling, student aid, etc., etc.), lower teacher-pupil ratios, more autonomy in areas affecting administration of staff and program, more money for "contingencies."

* The public school program must provide opportunities (by whatever means) for students of different cultural and ethnic backgrounds to "mix" and come to know one another, to appreciate the essential mutuality of common needs.

* The curriculum must provide opportunities for students to learn about the world as it really is, a family of nations ever more interdependent, where loyalties must be guided by the ethic of love rather than the emotion of nationalism if mankind is to continue to progress.

* A school must become the focus for stu-

dents of healthy inquiry, experimentation and experience with real-life processes, where they can learn and test knowledges, understandings, and techniques of living.

- * Educators must accept responsibility for helping individuals learn personal and social integrity, a good self-concept, a regard for others, a sense of personal responsibility for individual action, a dedication to self-realization consonant with the best interests of self and society.
- * Educators must eventually accept responsibility for helping individuals become conscious of many types of problems such as air pollution, the need for a viable world government, man-machine relationships, and then help them form their thinking as to what should be done about these problems.

PART II

Tomorrow and Tomorrow

The present mires mankind in problems that are a part of the past. This has always been so. Man has had very limited capabilities for predicting or anticipating problems, and so has always been in the position of doing something about something "after the fact." This is a hard way to exist, and has kept man in a constantly defensive position. A defensive attitude is the genesis of conservatism, and conservatism is a condition not conducive to the risk-involving application of man's higher creative capabilities - his ability to dream, his ability to yearn for something better than he knows and to be something better than he is, his ability to synthesize information and project new knowledge, his ability to care for an ideal and for others than himself.

In recent history, however, man has developed tools of intellect and material substance that permit him to anticipate, and even predict, certain types of problems. With increased sophistication in this area of human endeavor, man will help himself achieve other than a defensive position in relation to life's problems. He will be able to anticipate, to simulate problems, to develop alternative solutions, to make choices on the basis of use of his higher creative capabilities; and, hence, to achieve a significant step forward to self-direction not quite so subject to the influence of blind chance.

The new education system will be man's chief instrument for using new knowledge, newly released creative impulses to build a new society. Schools of the future that will accomplish this task are now being seeded, and their growth will be more rapid than either skeptics or dissenters foresee.

Within the next twenty years, the formal education program will be extended down to include children one year old. These babies will be taught good eating habits, toilet habits, and through use of Link trainer-type machines, will be taught how to use their own bodies in a reasonably disciplined way, and how to extend the use of their bodies by the manipulation of devices and instruments that will alter their environment - light, sound, temperature, visual experience, tactile sensation. Children with coordination problems will be taught how to improve their abilities or how to compensate for their disabilities. They will be placed in social situations where they will learn good group behavior, the benefits of cooperation and the joys of individual effort.

Children in these early years will receive careful medical examination. Special diets will be prescribed. Those with neurological or emotional handicaps will be diagnosed and treated in special clinics. Treatments may involve both surgery and the use of drugs.

Physically handicapped individuals will be given special programs, but will be involved also in regularly conducted group programs with normal children. Individuals will receive a close psychological scrutiny, interests and capabilities will be most carefully noted, and experiences to test their interests and capabilities, to guide and direct them, will be provided.

As the child grows, the formal education process will extend to encompass all of his activities. Home television will be constructed to take cartridge-contained programs designed to supplement school experiences. Play will be guided by suggestion (subliminal learning) and the extension of learning experiences into play situations.

School environment will be "open" and children will move from one group to another as they pursue specific projects. As they learn basic skills, they will be encouraged to attack problem situations designed to challenge and expand their talents. Their progress through the education system will be continuous (no "grades") and at their own rate of speed.

By the age of twelve, students will begin to specialize in subject areas of their own particular interest and qualification. All "general education" will be keyed to and built around this specialization.

The "Educational Park" or some modification of this idea will be the school of the future, where children and youth of all ages will mingle together and share learning experiences designed to provide practical involvement in real problem-structured situations. Most of a student's day - and many evenings - will be spent at the Park on activities which he will help design and direct. (Most Educational Parks will have dormitories for the significant number of students who will "live in.")

A fundamental part of the education program will involve students of all ages in community service projects. These will be of many types: conservation, beautification, social service, construction of parks and other public works, theater, music, art, child care, work with senior citizens. Credits will be given students for participation in community service projects that can be traded for various kinds of goods, vacations, or further education.

The Education Park will be organized as its own community, students participating with staff in establishing and maintaining rule and regulation for control of the community. Communication between Parks will occur at many levels and in many ways. Exchanges will be made of entertainment and study groups. Of course, there will be inter-park competitions of all sorts - debate, music, athletics, bids for community service projects.

Parks will elect student and faculty representatives to regional Boards of Education to participate with lay citizens in determining educational policy.

At about the age of fourteen years - older for some, younger for others - each individual will go to a Problem Clinic. There he will receive a thorough physical and psychological examination, and his school experience record will be evaluated. He will be given group and private therapy to reinforce a healthy self-concept, and will participate in group counseling sessions where he will be encouraged to identify the major problems in his life as he views them at the moment.

Some individuals will feel their lives dominated by one tremendous, all-pervasive problem. Others will feel themselves overpowered by a galaxy of problems. The latter group will need to be counseled for categorizing their problems. The problem or problems each individual identifies as "his" will become the immediate target for attention, and the solution of the problem or problems will become the educational objective from which and around which his particular curriculum will be constructed.

As the student works on "his" problem, careful efforts will be made through individual and group counseling to help him relate his efforts to the problems and efforts of others. He will be encouraged by the accumulation of data to expand his horizon and to project his thinking into the future - what he wants to do with his life.

Relating the individually prescribed (oftentimes self-prescribed) student curriculum to the student's life goal will be a critical operation. Once this has been accomplished, more direct guidance will be given the individual in planning and structuring his learning experiences. His program of studies will still be directed by individual motivation, but the program will be more formal at this period than others in that certain prescribed problems will be presented the student for solution, and group learning experiences will be part of the prescription.

The student will be sent from the Problem Clinic to a teacher who has competence in the major problem area or areas identified by the student.

The teacher will help the student do these things:

1. Define his problem or problems as explicitly as possible.
2. Establish objectives for attacking each problem.
3. Outline procedures for accomplishing each objective.
4. Identify resources available for assistance in pursuing the project.
5. Establish priorities for action.
6. Establish a tentative calendar for pursuit of the project.
7. Establish a schedule for making progress reports to Computer Control.

As students develop and complete projects, there will be a natural evolution to new and more complex subject matter. Goals may shift. Procedures, however, the process for assigning tasks and achieving goals, will remain the same; that is, a system approach to problem solving.

An important aspect of project development for the student will be that of budgeting his time so that he may accomplish his studies and still involve himself in those activities that will also be an integral part of the education process. Such activities will include:

- * Participation in community service projects.
- * Development of a hobby or hobbies.
- * Participation in a physical fitness program.

- Participation in some "Park-community" activity - competitive athletics, music, drama, art, debating, political office, etc.

- Social activities.

Participation in the expanded program activities will be cleared through Computer Control so that the student may be registered in the various activities and a participation schedule worked out for him. Students will be able to recycle their registration and request schedule changes when desired.

Upon completion of a project, the student will go to an Evaluation Center. There he will register completion of his project with Computer Control and report how he has accomplished the objectives of the project. Material produced as part of the project will be recorded by an optical scanner and made part of the record. Models, constructions of various types and other items that cannot be recorded by Computer Control will be accepted and held for subsequent evaluation.

A teacher will be assigned to meet with the student following his registration of completion of project. The teacher will first review the student report made to Computer Control, examine any products, models, etc., that were part of the project, and then meet with the student - or students, if more than one worked on the project - for an evaluation session.

At the evaluation session the student will decide whether or not he needs to probe further into the subject matter of the project. He can restructure his approach to the project, expand his consideration, or go to a project closely related to the one completed. He may decide, with the teacher, that he has accomplished as much as could be expected from the experience.

If there is disagreement between student and teacher about the outcomes of the project and whether or not the student should recycle and do additional work, a panel of teachers and students with competency in the student's field will be called and given the right of adjudicating the matter. The panel's decision will be final, and the student will either recycle or progress to another project according to the recommendation of the panel.

Students will remain at the Educational Park until a panel of teachers determines that the level of sophistication of the student's projects justifies graduation. When this time comes, students will be allowed certain choices. This will be true of both boys and girls. They will choose:

* Military Service. Career choice or two-year "hitch." Voluntary enlistments will "fill the ranks," and military affiliation will represent a good career opportunity. The military will be part of an international police force with interesting worldwide responsibilities.

* Peace Corps (or its equivalent.) Two-year "hitch," for service throughout the world. In time, many countries will cooperate to create an International Peace Corps.

* VISTA (or its equivalent.) Two-year "hitch," for service in the United States of America. There will be no "depressed areas," but there will be new kinds of problems that will afford ample opportunities for social service.

* Further Education. This opportunity will be available to everyone. Individuals will have the chance to attend all sorts of specialized institutions as well as a junior college or institution of higher education. Full scholarships for subsistence as well as tuition will be available as a loan from the National Educational Scholarship Fund. Students may attend the institution of their choice.

* A Job. When a student decides to "go to work" upon graduation from the Educational Park, he will register with the Park's Employment Agency. He will have vocational counseling services available to him, and an opportunity to apply for jobs all over the world. Those for whom placement in a job is, for whatever of a variety of reasons, impossible will be assigned to the National Job Corps, a permanent agency of Federal Government assigned responsibility for construction and maintenance of public parks, public works of various descriptions, construction and maintenance of special roads (fire roads, fire breaks, trails, etc.), conservation of water and land resources, and other government projects.

* Space Colonization. Opportunities will be available for carefully selected individuals to participate in the exploration of Space and the establishment of settlements on other worlds. There will be opportunities for individuals to "man" permanent space stations. Colonies will be established on the Moon, Mars, perhaps other planets. Space probes will last lifetimes, and volunteers will be required to "man" ships that will never return to Earth.

In the new education system, teachers will have highly developed competency in general subject areas. They will be experts in using group process techniques. They will be skilled in procedures for individual and group counseling. They will know system analysis and be able to help any individual locate resources for use in project work. They will be skilled in use of the very latest data processing systems.

Teachers will not have classes, but will be expected to accept supervisorial responsibility for perhaps twenty-five students at a time. They will serve as consultants to students, seminar directors, lecturers on special occasion, and will pursue independent or cooperative research or other professional activities to contribute to the profession as a whole and to their own individual growth. Teaching will be, in truth, a profession, and will challenge the full commitment of the teacher.

Teacher training will be a cooperative effort between institutions of higher education and school districts, with curriculum prescribed by the school district. The teacher will never stop his formal education. He will maintain a continuing relationship to an ongoing program of teacher education by helping prospective and beginning teachers, and by pursuing individual projects at the Educational Park or some institution of higher education designed to increase his competence and add to the knowledge and understanding of the learning process.

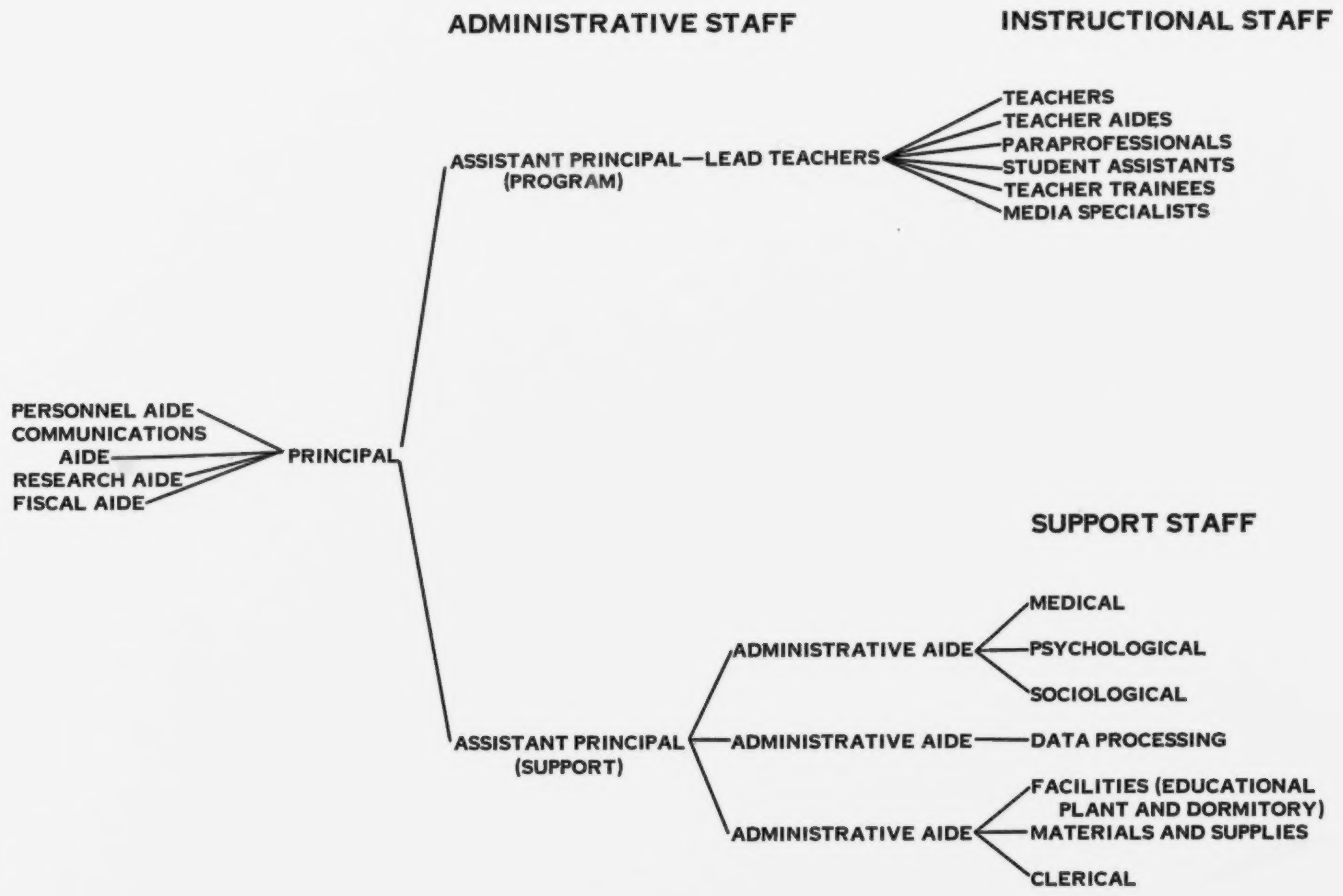
Administrators in the new education system will be management specialists, as stated earlier (Chapter III). They will help staff establish goals, organize tasks, evaluate results, and function effectively. They will be experts at marshaling resources; supplying logistical support to the education process; maximizing group and individual efforts; and establishing effective communications between individuals and groups, staff and students, school and community. They will be skilled in use of such techniques and procedures as system analysis, interaction analysis, group organization, and the involvement of people in decision making.

Management of the education enterprise will become a more and more complex affair. An organizational chart for the Educational Park of the future might look like the one portrayed by Figure I, next page.

In such an organization there might be as many as twenty "Lead Teachers." This will create an "Administrative Staff" of twenty-nine. Policy will be formulated by this group and submitted through established channels to Instructional Staff, Support Staff, and Students for discussion and final ratification. (Policy matters may be suggested to the Administrative Staff by either Staff or Students for consideration.) It will be the Principal's responsibility to see that policy matters are presented properly for discussion, and it will be his responsibility to facilitate consideration of modifications suggested, handle the mechanics of re-referral of policy to the Administrative Staff for revision. Once ratified by all groups involved, policy will become a part of rule and regulation. It is the Principal's responsibility to see that it is presented to all concerned in a manner that can be understood, and it then becomes his further responsibility to see that it is fully implemented.

The Principal's prime responsibility in the new administrative structure will be to help initiate and facilitate the development of educational policy, not act as fireman, policeman, head custodian, arbiter of disputes between various members of the staff, chief gossip, "whipping boy" for everyone, principal clerk, chief accountant, employment counselor, and

FIGURE I


ADMINISTRATIVE STAFF
INSTRUCTIONAL STAFF
SUPPORT STAFF
PERSONNEL AIDE
COMMUNICATIONS AIDE
RESEARCH AIDE
FISCAL AIDE
PRINCIPAL
ASSISTANT PRINCIPAL (PROGRAM)
LEAD TEACHERS
TEACHERS
TEACHER AIDES
PARAPROFESSIONALS
STUDENT ASSISTANTS
TEACHER TRAINEES
MEDIA SPECIALISTS
ASSISTANT PRINCIPAL (SUPPORT)
ADMINISTRATIVE AIDE
MEDICAL
PSYCHOLOGICAL
SOCIOLOGICAL
ADMINISTRATIVE AIDE
DATA PROCESSING
ADMINISTRATIVE AIDE
FACILITIES (EDUCATIONAL PLANT AND DORMITORY)
MATERIALS AND SUPPLIES
CLERICAL

"busy work" specialist.

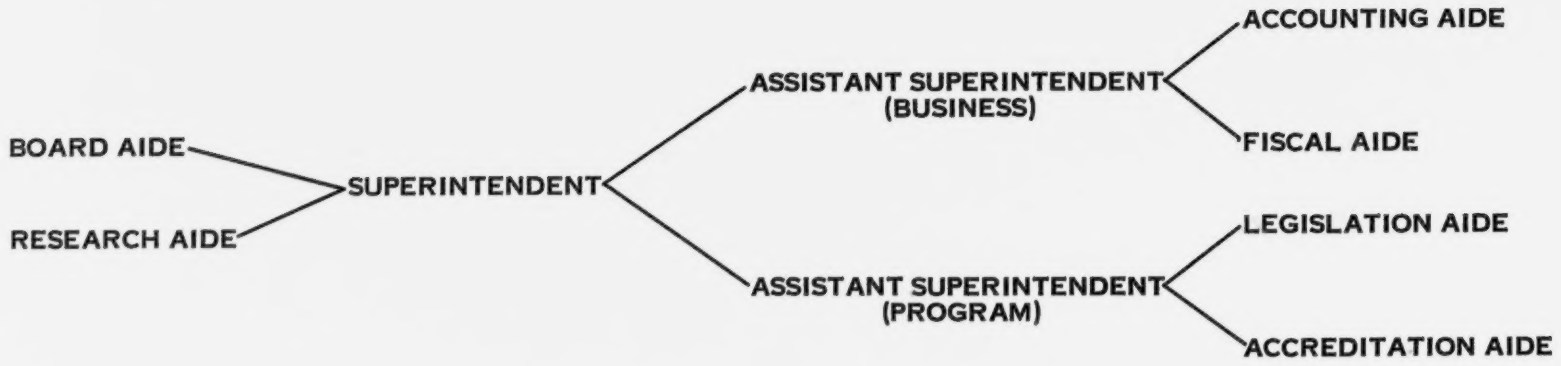
The Administrative Staff will be organized into administrative teams to fulfill assigned tasks. Full autonomy and total responsibility will be given to the teams, which will be responsible for action to the full Administrative Staff. Most controversial decisions will be resolved by problem simulation to fully identify alternative solutions for problems. Impasse situations will be arbitrated by the Administrative Staff Advisory Committee composed of the Principal, one Lead Teacher (selected by the Lead Teachers,) the Assistant Principal (Support) and two students.

Grievance procedures will be carefully detailed and handled by the Principal's Personnel Aide. A team composed of the Personnel Aide and the entire group of Lead Teachers will do all Instructional Staff evaluation. A team composed of the Personnel Aide, Administrative Aides and one representative of each of the Support Staff categories will do all Support Staff evaluation.

The two Evaluation Committees will handle all pre-employment interviews, contract negotiations, employment (even of the Principal, who will be treated as a member of the Instructional Staff,) evaluation, assignment and reassignment of personnel, and dismissal.

School districts will be regional, including from one to ten or twelve Educational Parks. The function of district organization will be to provide logistical support for the Parks. The district office will be governed by a Board of Education composed of lay citizens, faculty and student representation from the Educational Parks of the district. (Some Boards may number as high as thirty members, equally divided between lay citizens and

FIGURE II


BOARD AIDE
RESEARCH AIDE
SUPERINTENDENT
ASSISTANT SUPERINTENDENT (BUSINESS)
ASSISTANT SUPERINTENDENT (PROGRAM)
ACCOUNTING AIDE
FISCAL AIDE
LEGISLATION AIDE
ACCREDITATION AIDE

Educational Park representatives.)

The district office will perform accounting functions, handle the disbursement of educational funds to the Parks, work with Fiscal Aides from the Parks in budget preparation and control, perform research, represent the Educational Parks in legislative matters, and work with the Regional Accrediting Agency in maintaining an Educational Park Evaluation Program designed to provide quality assurance concerning the educational program. An organizational chart for district organization is suggested in Figure II, opposite.

* * *

The foregoing material is not really speculation. It is actually projection of present trends, developing understandings, evolving philosophies, and growing competencies.

There are now on the market "Creative Playthings" designed to provide educational experiences via manipulative devices for eight-week-old babies. Schools are being constructed by the dozens to provide the open environment essential to a "continuous progress" individualized educational program. One-third of the Infant Schools in Great Britain are following a learning-experience program where the instructional staff operates more as consultants than as traditional teachers. Computers now help business, industry and government solve all sorts of problems through the use of simulation techniques. Social, economic and political pressures are bringing about the actual establishment of Educational Parks in various parts of the country.

The limitations of human progress are established only by man's imagination. Humankind is just about at the point where anything imagined can be constructed, anything thought of can be achieved. At least, man is ready for the first steps in accomplishing either of these suggestions. The race now is neither to the swift nor the sure, but to the most imaginative.

Educators need to "tune in" to the facts of this circumstance. They need to "tune up" to project the future. They need to "turn on" with the stimulation that comes from this type of cerebration so that they may move toward realization of the bright promise that beckons from just beyond the edges of man's understanding.